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# Avoid Cold: A Brief Look at Tibetan Medical Practice and Ideals Compared to Modern Allopathic Medical Treatment Through a Study and Analysis of the Essential Tremor

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# **Avoid Cold:**

**A Brief Look at Tibetan Medical Practice and Ideals  
Compared to Modern Allopathic Medical Treatment  
Through a Study and Analysis of the Essential  
Tremor.**

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**SIT: Tibetan Studies, Fall 2005**

# Disclaimer

First, Tibetan medicine operates on two functioning levels:

- 1) *The Dharmic*: Healing by tantric ritual which includes mantras and ceremonial rites, exorcism, and other religious practices<sup>1</sup>. This form of healing can only be preformed by high lamas
- 2) *The Mundane*: The material form of Tibetan healing consisting of medicine, acupuncture, massage, etc.

In this paper, we are principally concerned with the later. The Dharmic level will not be compared to allopathic medicine due to practicality, lack of equivalent terminologies and concepts in western medicine.

Furthermore, all Tibetan terms will be spelled out phonetically, but to avoid confusion Tibetan spellings will be provided in Tibetan in Appendix 1. In the body of the paper, where a suitable translation is available I will use it, otherwise the Tibetan term will be used

\*Cover photos are: the Da Vinci man (<http://www.virtualsen.com>), and King Songsten Gampo (<http://www.orientalstudies.biz/OrientalStudies/TibetanMedicinePage.htm>)

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<sup>1</sup> Jimmy Lama 17/11

## **Acknowledgements:**

I just want to thank all of the physicians who demonstrated incredible patience and generosity in their dealing with an ignorant student who asks too many questions. Without the help of Dr. Tsepak, Dr. Dickyi Yangzom, Dr. Ngawang Dhakpa, Dr. Phillip O'Carroll, Dr. Dave Krakow, and Dr. Saanga this project and the incredible experiences I had along the way would never have happened. Each physician went far above and beyond simply answering my questions, and eagerly provided me with as much information as I was willing to record. I would also like to thank the not-so friendly Nepali mini-bus drivers who ferried me to interviews all over Kathmandu.

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# Introduction

## The West, the East, and Tremors

### **The West**

For hundreds of years, western science understood the material world as a set of individual objects assembled into an impossibly large and complex machine. This mechanistic ideology, dubbed reductionism, finds its roots in the mathematical theories of Newton, the philosophy of Descartes, and the methodological approaches proposed by Francis Bacon.<sup>2</sup> The culmination of these ideologies lead to the belief that all complex systems could be understood and ultimately mastered by reducing them to their basic elements. Some texts, including Fritjof Capra's *The Turning Point*<sup>3</sup> argue that once classical physicists established this type of thought, the other sciences, including medicine, simply followed suit and came to accept the attitude as law. Today, the modern western, or allopathic, medical system continues to deal with diseases and treatments according to what's become known as the "doctrine of single causation." As it implies, this ideology leads western doctors to seek a\out and isolate specific causes for an ailment. Treatment, then, revolves around the elimination of that problem from the complex system which incorporates it. Consequentially, despite a quick and precise cessation of the ailment, the overall function of the system may be affected. These side effects can range from acceptable (drowsiness, sensitivity etc.) to debilitating and even fatal.

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<sup>2</sup> Drummer pg.127

<sup>3</sup> Capra

## The East

However, on the other side of the planet, some cultures took an entirely different approach in understanding the nature of the world. In large part due to powerful Buddhist influences, the Tibetan people came to appreciate the complex systems of our planet as a whole. These seemingly utterly interwoven relationships were valued for their function, not the "material sub-strata of which they were composed", but the synergy they created.<sup>4</sup> The Tibetan people possessed a solid understanding of the intricate relationships they observed in the natural world and were sensitive to the effects brought on by changes in that world (including changes in time of day, temperature, season, etc.). So it comes as no surprise that Tibetan medicine developed a view of the human body, with its intricate anatomical, philosophical, and intellectual functions, as a microcosm of the natural relationships all around them. Tibetans understood disease as an imbalance within the functioning body and thus "healing is effected by restoring the lost equilibrium and not by symptomatic treatment of a particular organ."<sup>5</sup> Furthermore, Tibetan doctors are much more concerned with using symptoms and an understanding of these functions in order to identify the primary cause, or root, of a disease, going beyond the problem to find its much more subtle origins. Their texts state that symptoms are caused by a sort of 'chain reaction' of events within the body emanating from the primary cause. As a result, diagnosis may require proper environmental setting and timing, while therapies can take significant time and patience as treating the entire system requires much more subtle and sensitive methods than we see in the west.

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<sup>4</sup> Finckh pg. 9

<sup>5</sup> Ibid

## **So Why Tremors?**

While the theories governing these two modern medical systems evolved from vastly different foundations, it is in practice that conflicts become most apparent. Through studying and comparing the alternate methods used to define and treat the disease, we can better comprehend each tradition as a whole (thereby using both reductionist and holistic perspectives). Yet to obtain such a thorough understanding, we must study an appropriate disease; one which exemplifies the inherent conflicts between the two ideologies, while concurrently shedding light on the strengths and weaknesses of each approach to treatment. The essential tremor provides us just that. While tremors have afflicted mankind for thousands of years (ancient texts from both cultures acknowledge the ailment), it's only within the last century that western medicine has begun to truly understand and effectively treat the disease. This current curiosity leaves many researchers more open to recognizing and investigating alternative theories. Additionally, current treatments used by each tradition couldn't be more typical. Western methods involve invasive surgeries and/or harsh pharmaceuticals which promise rapid results, although sometimes accompanied by serious side effects. Meanwhile, Tibetan methods are slow, holistic, and organic, but can take months to years to gradually show results. Perhaps most significant is the fact that allopathic medicine offers no actual cure for tremors, only treatments which may alleviate symptoms, while Tibetan physicians claim they can ultimately offer a complete cure. Thus, the essential tremor provides us with the perfect lens through which we can analyze these complex traditions.

# Part I

## Defining the Disease

### *In the West:*

#### **Introduction**

Allopathic medicine cites the essential tremor as the most common movement disorder (a neurological condition which leads to involuntary movements throughout the body) afflicting human beings today.<sup>6</sup> First documented by James Parkinson as an “involuntary tremulous motion” tremors are defined by western medicine today as a “rhythmic, involuntary, oscillating movement of a body part in isolation or as part of a clinical syndrome.”<sup>7</sup> Although the disease is not life-threatening, it can lead to serious functional and social disability. In order to fully grasp the allopathic perspective of the disease, we must first attain a base understanding of the fundamental relationship between the human neural and muscular functions.

#### **The Western Brain**

The human brain is characterized by four main regions, or ‘lobes:’ the frontal, parietal, temporal, and occipital; with each contributing to neural functioning in a variety of ways. Every voluntary movement made by our bodies originates in these structures, most specifically, in the primary cortex. Also known as the motor cortex (or primary motor cortex, P.M.C.), this area forms a band separating the frontal and parietal lobes of the brain.<sup>8</sup> To carry out movement, the motor cortex receives information from sensory neurons throughout the brain. This information includes the body’s position in space (from the parietal lobe), goals and strategies for movement (from the frontal lobe), memories of past strategies (from the temporal lobe), etc. These signals are sent deep within the cortex

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<sup>6</sup> [www.ninds.com/tremor](http://www.ninds.com/tremor)

<sup>7</sup> Sweeny

<sup>8</sup> Dubuc: The Motor Cortex

to the basal ganglia, a group of neuronal structures. Once these have processed the complex information, they compile it into a signal, which is then channeled through the thalamus, back to the cortex, and on to the motor neurons.<sup>9</sup>

These motor neurons function like most nerve cells. Each is capable of creating an electronic impulse known as an action potential. This electronic charge travels down the neurons to the synaptic cleft, where it stimulates the release of neurotransmitters, chemical signals that can be picked up by adjacent neurons. These signals can either cause or prevent the next neurons in the chain from firing<sup>10</sup>. Different regions of the P.M.C. correspond to and control different parts of the body. Thus, these signals may originate from a variety of areas in the P.M.C.. A chain reaction carries these signals from neuron to neuron from the sensory somatic branch of the nervous system to the skeletal muscle fibers. The signal terminates at the neuromuscular junction<sup>α</sup> (the junction between the last motor neuron, and the muscular fibers).<sup>11</sup>

In a healthy brain, voluntary movement requires instantaneous processing on three distinct levels. First, the brain analyzes the task at hand and selects an appropriate response. Then it plans the movement in physical terms, and finally activates the motor neurons to execute movement. We can think of the thalamus as the last ‘check point’ for the processed information before it is sent on to the motor neurons. Basically, the region acts like a bottleneck through which most of the messages sent from the brain to various muscles of the body must pass. Due to the integral role these structures play in determining various aspects of our movement, their malfunctioning can result in trembling, difficulty initiating or terminating movement, etc; in other words, tremors.

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<sup>9</sup> Dubuc: Making a Voluntary Movement

<sup>10</sup> Freudenrich: Basic Neuron Types

<sup>α</sup> *simply a type of synapse*

<sup>11</sup> Freudenrich: How Muscles Work”

## **The Western Tremor**

Allopathic systems characterize tremors according to both symptoms and etiology (causation)<sup>β</sup> Despite the cause, tremors may manifest in a variety of ways, the most commonly believed causes of tremor and their manifestations can be found in appendix 2, but for the purposes of our study, we will focus on essential tremors. The specific mechanisms thought to produce essential tremor (among possible combinations of others) are referred to as ‘central oscillators.’ These are

*“Groups of cells in the central nervous system present in the thalamus, basal ganglia, and inferior olive. These cells have the capacity to fire repetitively and produce tremor. Parkinsonian tremor may possibly originate in basal ganglia, and essential tremor within the inferior olive and thalamus.”<sup>12</sup>*

Prevalence of the disease varies greatly depending on type and population. The highest recorded rates are found in central Asia with 5.6% of some populations afflicted. The disease shows a pattern of autosomal dominance, and thus family history is identified in over 60% of patients.<sup>13</sup>

So, with over ten possible pathological causes and five distinct symptomatic expressions, all driven by at least four pathophysiological mechanisms, allopathic medicine cites at least two hundred different types of tremors. This meticulous categorization is the result of discovering incredible details of the inner workings of the body, and is a perfect representation of the reductionist approach. But, allopathic medicine is by no means the only, or even the first medical system to characterize and categorize the tremor.

## ***In Tibet:***

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<sup>β</sup> Tremors may also occur as a result of problems within the muscular fibers themselves, but these problems are usually a result of the effects of drugs or toxins.

<sup>12</sup> Sweeny

<sup>13</sup> ibid

## Tradition

For centuries before Parkinson published his essay on the ‘shaking palsy,’ Tibetan doctors treated patients afflicted by an identical disease known in their culture as *Tsakar*, literally “disease of the white nerves,” but referred to as “the shaking limb disease.”<sup>14</sup> The foundational text of the Tibetan medical tradition, the *rGyud-bZhi*<sup>15</sup> or ‘the four treatises.’<sup>x</sup> As with allopathic medicine, to fully appreciate the Tibetan perspective, we must review its foundations and the evolution of thought regarding the disease.

Traditionally, “the Buddha, in his manifestation of the Buddha of medicine, is regarded as the originator of Tibetan Medicine.<sup>16</sup> The *rGyud-bZhi* is in turn regarded as a dialogue between two manifestations of the Buddha of medicine, one taking the form of the Buddha’s mind, and the other the Buddha’s speech. The text is written in the form of questions and answers regarding the nature and treatment of all disease.<sup>17</sup> Recorded history paints a slightly different picture. While modern Tibetan medicine is wholly interwoven with Buddhism, evidence shows that medical practice existed in Tibet long before the religion swept the region. This original practice was instead influenced by the shamanistic and bon religions.<sup>18</sup> As their heritages were rich in astrological principles, these found their way into medical practice of the day. The practices faded with the establishment of Buddhism as a state religion, the extent to which they influenced modern Tibetan medicine is unclear (although there is little doubt Tibetan astrology sprang from such origins<sup>δ</sup>).<sup>19</sup>

The Tibetan medical tradition we know today seems to have originated between 348-468 c.a., with the arrival of two great Indian healers Biji Gaje and Bilha Gaje, during the reign of the 28<sup>th</sup> king

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<sup>14</sup> Jimmy Lama 17/11

<sup>15</sup> Jimmy Lama 17/11; Tsepak 20/11; Finckh pg. 19

<sup>x</sup> *rGyud-bZhi* is an abbreviation of the full name of the text. It is also translated as ‘the four tantras,’ ‘the ambrosia heart tantra,’ ‘the Secret Treatise of Instructions on the Eight-Branched Essence of Mortality,’ and other names.

<sup>16</sup> Khangkar pg. 8

<sup>17</sup> Tsepak 22/11

<sup>18</sup> Finckh pg. 8; Khangkar pg. 10

<sup>δ</sup> with considerable influence from Chinese and Indian astrological concepts as well

<sup>19</sup> Saanga 18/11

Lha Thotho RI Nyantsen. The king was so impressed by their abilities that he provided his daughter as a bride to Biji<sup>6</sup>. In the early 7<sup>th</sup> century c.a., the 33<sup>rd</sup> king Songtsen Gampo invited the eminent physicians Bhardvaj from India, and Han Wang Hang De from China to share their knowledge with Tibetan physicians. One Hundred years later, king Trison-Deutson convened what was probably the world's first medical conference at Samye, Tibet. Top physicians from India, China, Persia, East Turkistan, and Nepal discussed theory and compared medical systems for days.<sup>20</sup> Yuthog Yonta Gonpo (personal physician to the king and member of the Yuthog lineage) represented Tibet, and evidence suggests that he “synthesized the best of the then known medical systems and re-wrote [or wrote] the *rGyud-bZhi*.”<sup>21</sup> The work has since been passed down through the generations, remaining the basis for the etiology of disease and the systems of diagnosis and therapy in Tibetan medicine today.

### **Disease in Tibetan Medicine: A (very) brief summary of *rGyud-bZhi***

As previously mentioned, health in Tibetan medicines is based upon equilibrium between the elements of which we are composed. Our bodies are thought to consist of three principal systems or humors: *rlung* (Wind), *thre-pa* (Bile), and *bad-kan* (Phlegm); each rising from the ‘three mental poisons’ which lead to suffering: *ded-chags* (attachment), *Zhe-dsang* (hatred) and *gTi-mug* (delusions) respectively; and all of which are born from ignorance, the root of all suffering.<sup>22</sup>

In a healthy body, these humors are all in balance, but a disturbance in one or more results in illness.

Disturbances may arise from diet, behavior, or environmental factors, but these are known as secondary

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<sup>6</sup> Thus beginning the famous ‘Yuthog’ medical lineage whose descendents served as personal physicians to the kings of Tibet for generations and whose works dominate Tibetan medical texts

<sup>20</sup> Men-Tsee-Khang pg. 5

<sup>21</sup> ibid pg 6

<sup>22</sup> Saanga 16/11

causes (*Kyen*). The root of disease itself, or the primary cause (*Kyu*) lies dormant within all of us, it is only when activated by a secondary cause that the *kyu* causes an imbalance resulting in illness<sup>φ</sup>.<sup>23</sup>

### **The Tibetan *Tsakar***

In the case of *Tsakar*, Tibetan physicians cite an imbalance in *rlung*.<sup>24</sup> *rlung* is believed to be responsible for all movement within the body: breathing, circulation, even neural signaling and consciousness (it is often referred to as the horse carrying ‘riders’ throughout the body).<sup>25</sup> There are five types of *rlung*, each contributing to specific bodily functions; for example, *kyab-che rlung* “pervades from the brain to the toes... it helps in the extension of limbs, muscular action... and smooth performance of bodily functions,”<sup>26</sup> and a disorder in which may result in *Tsakar*.

In addition to the character of these unseen forces, a doctor must understand the structure of both the body and the presenting disease. In this regard, Tibetan medicine agrees w/ allopathics in classifying *Tsakar* as a nerve disease. According to the *rGyud-bZhi*, all nerves (*tsa-nye*) originate at the *soktra*, the root of all nerves, located in the crown of the head and a major *rlung* ‘artery’ connecting the *lepa* (brain) to the rest of the body.<sup>27</sup> So, the nerves grow down from the *soktsa* and spread throughout the body ‘like the roots of a tree.’ Two main types of *tsa-nye* exist: inner *tsa-nye* which are unseen and connect to our internal organs, and outer *tsa-nye* which connect to the limbs and muscles, and thanks to which all controlled movement is possible (we will focus on the later).<sup>28</sup>

Secondary causes of *Tsakar* (like allopathic tremors) may vary, but include *taksha* (over exertion, and especially at young ages), *rimdoh* (as a result of epidemic disease), *tso-pa* (fever), *tsen* (an injury inflicted by a weapon), or *lung-tuk* (when the body gets shaken, i.e. driving down a bumpy

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<sup>φ</sup> We may think of it in terms of everyone having the potential for disease, as opposed to western medicine where disease is introduced.

<sup>23</sup> ibid

<sup>24</sup> Jimmy Lama 18/11

<sup>25</sup> Kangkar pg. 16

<sup>26</sup> ibid

<sup>27</sup> Tsepak 20/11

road). All of these causes result in an imbalance of *kyab-che rlung* and lead to *lekun* (brain dysfunction) and *Tsakar*.<sup>29</sup> *Tsakar* itself, like all diseases, is characterized according to two criteria: *chi* (general structure) and *chetak* (specific structure). General structure refers to whether a disease is a hot or cold disorder. Chronic disorders tend to be thought of as ‘cold’ diseases, while new or ‘fresh’ disorders are said to be ‘hot.’ Treatment will depend on whether a patient has only recently been afflicted by *Tsakar* or if symptoms have persisted over time. Specific characteristics are slightly more complex, and depend on location and humor. The disease, while originating in the brain, presents itself in other locations or *Neh* in the body; the head (*go*), body/torso (*chanko*), or limbs (*yang-la*). Specific humoric characteristics can arrive from wind, bile, phlegm, or a combination of the three known as *tuba*.<sup>30</sup> *Tsakar* can present itself in a variety of ways based on this structure, with each manifestation requiring a specific treatment.

Thus, while their methods and goals may differ, Tibetan and allopathic physicians alike must meticulously analyze symptoms to accurately diagnose and effectively treat *Tsakar/tremors* respectively.

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<sup>28</sup> ibid

<sup>29</sup> ibid

<sup>30</sup> ibid

## Part II

# Treating Disease: From Diagnosis to Results

As with any disease, a physician must have the ability to recognize and understand specific symptoms of tremors/*Tsakar*.

### *The Allopathic Perspective*

#### **Diagnosis**

As described in appendix 2, allopathic medicine perceives five ways in which tremors present: resting, postural, kinetic, task-specific, or terminal. While these would seem to be obvious and straightforward symptoms, they require careful observation and examination to accurately discern between. Thus, a diagnostic evaluation of a tremoring patient must include an investigation into the patient's clinical history, a clinical examination, and consideration of possible differential diagnosis.<sup>31</sup>

A patient's clinical history should reveal past “tremor onset, duration, severity, affected areas, activation factors (possibly like those Tibetan physicians would expect) relieving factors, effects of alcohol [or other substances], family history, and associated symptoms.”<sup>32</sup> Most, if not all of this information is obtained from simply questioning the patient or close family/friends, and significantly contributes to the doctor's following examination, helping to rule out some possibilities and directing tests towards more probable ones.

The purpose of the clinical evaluation is to determine tremor rating and frequency. First the patient must be observed in resting, non-tremulous state. Then, the tremor should be measured when the patient assumes various positions, and during movement (the doctor pays special attention to gait,

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<sup>31</sup> Sweeny

muscle tone, facial expression, and dexterity<sup>γ</sup>).<sup>33</sup> In order to “measure” tremor, allopathic physicians use a scale based on severity:

- 0- No Tremor**
- 1- Slight Tremor**
- 2- Moderate tremor** (less than 2 cm excursion)
- 3- Marked tremor** (2 cm to 4 cm excursion)
- 4- Severe tremor** (more than 4 cm excursion)<sup>34</sup>

Additionally, both amplitude and frequency of tremulous oscillations help to pinpoint and rule out possible causes. Not surprisingly, a laboratory workup is unnecessary for most tremor patients, but can be helpful in ruling out confounding factors or diseases<sup>η</sup>. Electromyogram (EMG) and EEG recordings may also be helpful<sup>ι</sup>.

## **Treatment and Results**

Essential and Parkinsons induced tremors are slowly progressive disorders. While allopathic medicine offers neither preventative therapies, nor any complete cures, a number of effective treatment options, both pharmaceutical and surgical, are available. Unfortunately, these treatments may have serious side effects; in some cases the risks of medication outweigh its potential benefits.<sup>35</sup> Typically, treatment programs begin with either primdone or propranolol. Both drugs block the action of stimulant producing neurotransmitters, and are most effective for upper limb tremors, with 60-70% of

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<sup>32</sup> *ibid*

<sup>γ</sup> *especially important for ruling out other diseases such as parkinsons*

<sup>33</sup> *ibid*

<sup>34</sup> *ibid*

<sup>η</sup> *“A thyroid function test is helpful to rule out hyperthyroidism in patients with signs of thyroid disease and tremor, particularly postural and action types. In young patients (younger than 40 years of age) with signs of parkinsonism and tremor, a serum copper, serum ceruloplasmin, 24-h urinary copper, and slit-lamp examination is necessary to rule out Wilson's disease. To rule out systemic causes of tremor, such as hypoglycemia, liver disease, electrolyte imbalance, or drug abuse, appropriate tests should be ordered.” (Sweeny)*

<sup>ι</sup> *EEG: An electroencephalogram (EEG) is a test to detect abnormalities in the electrical activity of the brain  
EMG: Electromyography is a test that assesses the health of the muscles and the nerves controlling the muscles.*

<sup>35</sup> Duma

patients noticing a reduction in tremor amplitude.<sup>36</sup> Side effects of Propranolol include fatigue, bradycardia (a slowed heart rhythm), and peripheral vasoconstriction (resulting in a shortness of breath), among others. Primidone, while more effective (in many cases reducing tremor amplitude by 60-70%) may produce vomiting, sedation, vertigo, ataxia (loss of coordination), and headache (although some suggest side effects can be avoided by beginning treatment at very low doses and then gradually increasing doses). If taking either drug separately is not effective, the two may be combined together or with an array of other drugs further described in appendix 3.<sup>37</sup> If there is no benefit from standard pharmacological treatments (as is the case for one out of four patients) localized injections of botulinum toxin<sup>o</sup> may be used. Yet, for patients with “severe, disabling, medication-refractory tremors” (or for those unwilling to take the described medications every day for the rest of their lives) surgery is also an option.<sup>38</sup>

In the past, thalamotomy (the destruction or removal of a portion of the thalamus) was advocated for these patients, but today, a much more viable option is available: Deep Brain Stimulation (D.B.S.). As previously mentioned, most of the messages sent by our brain regarding body position must pass through the thalamus. In patients with tremors, these messages become corrupted and ‘firing’ improperly. D.B.S. involves implanting an insulated lead wire capable of electronic stimulation into the thalamus. The impulses can interrupt and slow the corrupted messaging system and suppress tremors as well as rigidity and stiffness associated with Parkinsons disease.<sup>39</sup> State of the art MRI brain mapping and real time imaging in the operating room precisely determine the exact location for implantation within the thalamus. Once implanted, the lead is activated, tested, and tuned for optimal effectiveness (all while the patient is still on the operating table and conscious). A pacemaker-like pulse generator is implanted in the chest and connected to the wire. The entire procedure from brain

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<sup>36</sup> [http://www.wemove.org/et/et\\_pt.html](http://www.wemove.org/et/et_pt.html)

<sup>37</sup> *ibid*

<sup>o</sup> *Botulinum toxin is made by the same bacterium that causes food poisoning. A high dose of botulinum toxin could be fatal, just as food poisoning can be fatal.*

mapping to recovery room takes 2-3 hours and full effectiveness of the treatment may be experienced immediately.<sup>40</sup> However, risks and side effects, while rare, are ever-present. Surgical risks include: internal bleeding (2%), leakage of fluid into the brain (1%), seizure (1%), and infection (2%).<sup>41</sup> Side effects from therapy may include paresthesia (tingling in the limbs), paresis (facial or limb muscle weakening), dysarthria (speech problems), dizziness, coordination problems, or jolting/shocking sensations. The procedure boast an 85% rate for ‘complete control<sup>κ</sup>’ of tremors, 10% partial control, and only 1% complication rate (with a 5% ‘presumed failure rate’).<sup>42</sup>

Thus, it is easy to see the nature of allopathic medicine in the treatment of tremors. Therapy is powerful, efficient, and precise. The most cutting edge technology is utilized (at no small expense to patient/insurance company) and can produce instantaneous results. But, the benefits only exist as long as treatment persists (in most cases indefinitely) and a vast spectrum of possible side effects looms over every option. However, for every patient each detail, from diagnosis to observed results and side effects, is meticulously recorded and analyzed. These painstaking procedures allow researchers and physicians alike to see the successes and failures of the past and determine what methods failed and which ones show the most promise, thus giving allopathic medicine the ability to learn from the past and continually evolve and constantly develop new and better healing techniques.

Now that we’ve reviewed the allopathic treatments, it comes as no surprise that Tibetan medicine takes a somewhat different approach to treating the disease.

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<sup>38</sup> Sweeny

<sup>39</sup> Duma

<sup>40</sup> ibid

<sup>41</sup> ibid

<sup>κ</sup> *keeping in mind this is not a cure, as treatment must be constantly administered.*

<sup>42</sup> ibid

## *The Tibetan Perspective*

Just like western physicians, Tibetan doctors spend decades learning about symptoms and methods of diagnosis, in which the staples of the Tibetan tradition (interdependence, holistics, etc.) are blatantly evident. Every factor, every action, every aspect of the patient is considered a clue as to the nature and necessary treatment of the disease.<sup>43</sup> To Tibetan practitioners,

*“Cause and effect operate on every level-horizontally, vertically, and in combination. Nothing is unrelated and should it appear to be, it is only apparently by chance.”<sup>44</sup>*

Once again, before explaining the details of diagnosis and treatment of *Tsakar*, it is essential we review and understand general Tibetan methods of each action.

### **Diagnosis**

Traditionally, and today, Tibetan medicine uses three methods of diagnosis, referred to as inspection, palpation, and interrogation; and combine to satisfy four major goals:

- 1.) Determine conditions and circumstances which lead to disease (including activities, environments, etc.)
- 2.) Ascertain living and dietary habits prior to illness
- 3.) Ascertain nature of present habits
- 4.) Assess and classify symptoms<sup>45</sup>

Inspection consists of two principal aspects: inspections of the tongue and inspection of the urine. In each case, physicians look for three distinct signs, relating to each of the three humors as evidence of an imbalance (and in turn illness).<sup>46</sup> Urine analysis is especially crucial as Tibetans believe

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<sup>43</sup> Jimmy Lama 18/11

<sup>44</sup> Drummer pg. 75

<sup>45</sup> ibid

<sup>46</sup> Saanga 18/11

it “is like a mirror that reflects the feathers of disorder.”<sup>47</sup> One telling characteristic is known as *Kuya*. Described as “a cloud within the urine,” Dr. Tsepak, a physician at the *Sorig* clinic tells us that *Kuya* is like “a merchant going everywhere in body and last into our urine. It carries message about disease<sup>λ</sup>.”<sup>48</sup> Inspection also includes general appearances of the patient such as complexion, posture, attitude, etc., just as a physician from any tradition might (although Tibetans place emphasis on appearance of eye-lids and earlobes as well.)<sup>49</sup>

Palpation refers to diagnosis by touch, or pulse diagnosis; easily the most well known aspect of Tibetan medicine, and arguably the most important method of diagnosis. During this process, the doctor ‘palpates’ the radial artery of each of the patients’ wrists. From this artery, the doctor can literally feel and ‘read’ the twelve separate pulses emanating from each of our major organs.<sup>50</sup>

Finally, the interrogative diagnosis process consists of twenty nine distinct questions, each related to disorders/imbances of a specific humor. The first questions revolve around general nature, followed by more specific inquiries aimed at establishing more precise information about both patient and disease.<sup>51</sup>

## **General Treatment**

Tibetan treatment is applied (in order) on four levels:

- 1.) *Diet*
- 2.) *Behavior*
- 3.) *Medicine*
- 4.) ‘*Surgery*’

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<sup>47</sup> Men-Tsee-Khang pg. 27

<sup>λ</sup> *Urine analysis is so complex and precise, a fair description would require a significant text entirely dedicated to it. An excellent reference can be found in the Journal of Tibetan Medicine, Vol. 3 Nov. 1983*

<sup>48</sup> Tsepak 25/11

<sup>49</sup> Jimmy Lama 18/11

<sup>50</sup> Tsepak 25/11

<sup>51</sup> Finckh pg. 14

A change in diet can be extremely specific. The taste, temperature, nature, of every ingredient in ones diet and combinations of those ingredients may have a major impact on health.<sup>52</sup> Usually, along with a change in diet (or if 1<sup>st</sup> treatment wasn't successful) a change in behavior is recommended. This can be anything from types of clothing to recitation of mantras and other ritual practice, avoidance of 'obstructing impulses' (hunger, excretion, etc.), daily activities to participate in or avoid, and especially temperatures to monitor. Simply being too hot or too cold may mean the difference between life and death. If neither of these treatments are effective (or if the doctor administers all three levels after the first diagnosis) medicine may be described. Tibetan medicines come in various forms, each made according to explicit specifications and methods from only natural ingredients. Finally, as a last resort, and only after exhausting all other options, 'surgery' may be recommended. However, Tibetan surgery is by no means comparable to invasive allopathic surgeries<sup>h</sup>. Their procedures only include moxibustion, *Che* (acupuncture-like needle therapy), "golden needle" therapy, and in rare cases blood-letting.<sup>53</sup> Finally, Tibetan Medicine categorizes each disease according to severity and ability to treat, diseases may be:

- 1.) *Easy to Treat*: with proper medicines and cooperation of the patient
- 2.) *Difficult to Treat*: long term, multi-faceted therapies may be required, administered by skillful physician
- 3.) *Incurable*: physicians administer placebos and support.
- 4.) *Treatment Must Be Withheld*: treatment may hasten effects of disease. (See 9 fatal conditions in Appendix 4)

For the majority of illnesses, a combination of dietary, behavior, and pharmacological treatments is recommended and may also include massage techniques as well. *Tsakar* is no exception.

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<sup>52</sup> Tsepak 20/11

<sup>h</sup> *Surgery was banned by the king in the 9<sup>th</sup> century after a royal patient died during a eye procedure*

<sup>53</sup> Jimmy Lama 17/11;; Tsepak 25/11; Men-Tsee-Khang pg. 63

## Treating *Tsakar*

When diagnosing *Tsakar*, a Tibetan physician must determine two major aspect of the disease in a specific patient; its location and the out of balance humor, each of which can be determined by detecting very specific symptoms. Recall that Tibetan medicine agrees with the allopathic system in that the origin of the ailment may be far from the symptoms. The Tibetan system takes this in either the torso or limbs as well.<sup>54</sup> Again, specific locations can be determined by specific symptoms. For example, while *Tsakar* causes tremors, limb paralysis, involuntary muscle contraction, etc, *Tsakar* of the head may cause facial paralysis, insomnia, vomiting, loss of speech or senses and other location specific symptoms. Meanwhile, symptoms arising from *Tsakar* of the torso are “speaking too much too quickly,”<sup>55</sup> speaking gibberish, intense shivering followed by intense thirst, etc.

Similarly, the humoric characteristics of *Tsakar* can and must be identified according to their own specific manifestations. *Tsakar* is a 'cold disease' arising from a wind imbalance, thus a physician should expect signs of fatigue, intense thirst (drying out due to excessive ‘wind’), and erratic thought (the “horse of consciousness” has been disrupted), etc.. On some very rare occasions, *Tsakar* can be due to bile disruptions, where the patient develops fever (this form of *Tsakar* is a ‘hot’ disease) sever pain, and poor digestion.<sup>v</sup> This form of *Tsakar* is known as *Cho Long Me Pa* (very difficult to cure).<sup>56</sup> Both location and humoric characteristics may be determined through inspection and interrogation, while a pulse reading can aid the doctor in determining which specific organs have been affected by the disease and in determining the most effective treatment.<sup>57</sup> According to Tibetan medicine, every patient must be treated as a unique, individual case with an equally unique ailment, which requires a ‘custom’ treatment catered to the specific therapies demanded by the situation. At this point, the course

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<sup>54</sup> Tsepak 22/11

<sup>55</sup> ibid

<sup>v</sup> *Tibetan medicine sees the stomach as something of a burning fire, and digestion occurs as a result of ‘burning food.’ When a patient is afflicted with a hot disease, this heat has been disrupted* (Tsepak 25/11)

<sup>56</sup> Tsepak 25/11

<sup>57</sup> ibid

of treatment is entirely dependent upon the experience, style, and skill of the acting physician. Still, there are certain medicines recommended by *rGyud-bZhi* and generally accepted by the medical community as the most likely options, although combinations, dosages, etc. may vary wildly. With regard to *Tsakar* medication is the principal form of treatment, followed by message and rest.

Medications include:

- |                                    |                                    |
|------------------------------------|------------------------------------|
| - <i>DschuMar</i> 25 <sup>π*</sup> | - <i>Adach</i> 8, 15, 17, 20, 35*  |
| - <i>Mutik</i> 25                  | - <i>Samnor</i> *                  |
| - <i>SamKhyung</i> *               | - <i>Dhali-18</i> *                |
| - <i>ShingNa</i>                   | - <i>Kundi</i> *                   |
| - <i>LaMing</i> 25*                | - <i>Potuk</i>                     |
| - <i>LayTeh</i>                    | - <i>Nykil</i>                     |
| - <i>PaChung</i>                   | - <i>Krag-Jaksung</i> <sup>o</sup> |

However, Dr. Ngawang Dhakpa (a.k.a. Jimmy Lama), a physician at the *Kunphen* clinic in Chhetrapati, Kathmandu is a perfect example of varying approaches to treatment. While most texts and physicians advocate ‘surgery’ as a last resort, Jimmy Lama considers it, combined with medication, a standard treatment. In his procedure, Jimmy Lama loads a mixture of herbal remedies into a hollow, 24-k golden coil with a sharp needle at one end. He then superheats the tip of the needle, punctures the skin at a very specific point above the spine and injects the herbal mixture. The heat ‘activates’ wind within the body, which then carries the medicine directly to the nerves. Still this is only one example of treatment; the following specific cases come from Dr. Tsepak’s personal recollection and the records of Dr. Dickyi Yangzom of the *Kailash* Medical Center, also located in Chhetrapati<sup>o</sup>:

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<sup>π</sup> Numbers refer to the number of ingredients (each of which may themselves be composed of multiple elements)

<sup>o</sup> Spellings of Tibetan medications and Details of those marked by an asterix ‘\*’ can be found in the following chapter and/or Appendix 5

<sup>o</sup> Unfortunately, Tibetan medical tradition has nothing in the form of written medical records (a fact to be discussed in further detail later on). The majority of clinics have no case reports from which I could report. Luckily, Dr.’s Tsepak and Yangzom recently began maintaining such records of their patients. While Dr. Tsepak assured me he had such records, he couldn’t find them and so could only recount past cases from memory. Dr. Yangzom’s records, while limited, were well documented and detailed.

## Dr. Tsepak

### Case 1:

Dr. Tsepak was visiting a village on the Nepali-Tibetan border. One boy was brought to him with ‘fresh’ and significant *Tsakar* in all four limbs, and the face. The boy had lost all bladder control as well (indicating *Tsakar* of the torso). Dr. Tsepak had only limited supplies of medicine, and could only provide pharmaceutical treatment for one week. He then advised the boy’s father to massage the boy’s entire body with rancid yak butter (aged at least 1-2 years) every day. After one week, the boy’s arm tremors subsided considerably to the point where he could hold a cup. After one month the boy could walk without assistance. Since, Dr. Tsepak has heard the boy made a full recovery

### Case 2:

On man was afflicted so terribly by tremors in his legs that walking was extremely difficult. Dr. Tsepak treated the man with *Che* (needle therapy). He administered *Adach*, *Samnor*, and *Mutik* medications. After two weeks, the man saw ‘noticeable improvement’.<sup>58</sup>

## Dr. Yangzom

### Case 1: 22/1/03

56 year old female showing tremors and arthritis. Difficulty walking, can’t put right hand behind back without inducing tremor. Allopathic doctor diagnosed her with poor blood pressure, treatment was not successful. Dr. Yangzom prescribed *nykil*, *Dhali 18*, and *Samnor* for ten days.

Ten days later, patient returned, showing improvement in the right hand. Dr. Yangzom prescribed *LaMing 25*, *Nykil*, and *Samkyung*, along with one ‘precious pill’ *Ranasambe* (a.k.a. *Dschu-Mar 25*) for one month.

4/3/03

Patient returned showing overall improvement (and no side effects of medication). Dr. Yangzom prescribed *Adach 35*, *Tiota 18* and *LayTeh* for 90 days

In May, patient returned. Hand was completely cured, legs were significantly improved

### Case 2: 28/1/04

34 year old female, new mother. Complained of feeling very cold during delivery. Also showing back pain, and tremors in both hands. Allopathic doctors determined it was a nerve disorder, but offered no treatment. Dr. Yangzom diagnosed *Tsakar* due to *rLung* imbalance. Prescribed *Kundi*, *SamKhung*, and *Adach 35* for ten days.

8/2/04

Patient returned, Dr. Yangzom prescribed *Potuk*, *PoChung*, and *KragJaksung* for another ten days

9/4/02

Patient returns, significantly improved, but not cured. Dr. Yangzom prescribes *Nykil*, *Samjung*, and *adach 35*.

24/11/02

Patient returns to thank Dr. Yangzom, tremors are completely gone.<sup>59</sup>

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<sup>58</sup> Tsepak 25/11

<sup>59</sup> Yangzom 27/11

Results, without accurate records and as proven by comparing the presented case ‘reports’, are nearly impossible to quantify, especially in any way which might hold up to western scrutiny. Yet, the presented cases, combined with information provided from other medical contacts, are intriguing nonetheless. As Dr. Yangzom explained (and as confirmed by other sources) treatment of *Tsakar* may take anywhere from three months to three years, depending on the severity and location of the disease as well as the skill of the physician (only in very rare cases are results as rapid as those recalled the ones Dr. Tsepak). Improvements develop gradually and diligence on the part of the patient is essential.<sup>60</sup> However, despite the slow progress, each doctor claimed a very high success rate for completely curing the ailment and saw no side effects whatsoever from treatment (although none could offer any numbers supporting these claims).

In the end, it’s obvious that the Tibetan treatment of *Tsakar*, like its allopathic counterpart, is a perfect reflection of the system which developed it. Neither the disease nor treatment are isolated in any part of the body, but are viewed as singular aspects of entire functioning (or dysfunctioning in this case) systems, which then must be evaluated and treated accordingly in its entirety. Diagnostic instrumentation and technology is non-existent, medication is prepared and produced by hand, and lacks any detrimental side effects; yet, detailed records are just as lacking. Thus, any successes are, at this point and according to western views, utterly ‘non-conclusive.’ This lack of documentation leads to the most controversial aspects of the Tibetan medical system, its pharmacology.

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<sup>60</sup> *ibid*

## Part III

# Tibetan Medication

For years Tibetan pharmaceuticals and the patients and physicians who swear by them have battled with the western scientific community over the safety and value of Tibetan medication. Tibetan physicians are eager to practice and administer treatment, but the western world cannot, ‘in good conscience,’ allow such unproven therapies. Driven by the scientific method (a “guilty until proven innocent” mentality), western science refuses to accept anything it hasn’t proven multiple times over to be risk-free and effective. The case of *Tsakar* brings up a perfect example. As mentioned earlier *DschuMar 25* (a.k.a. *Ranasambe* or “the precious coral pill”) is one of the most popular Tibetan medications for *Tsakar*, among many other ailments. Yet, one of the main ingredients is *Dnul-chu*, known in the western world as mercury (Hg). Both in the west and in the east, mercury is regarded as a toxic substance, responsible for causing headaches, vertigo, involuntary spasms, deafness, behavior change, severe mental disorders<sup>p</sup>, insomnia, symptoms of motor neuron disease and tremors.<sup>61</sup> As Tibetans understand these effects of mercury intoxication, it is essential that we understand the Tibetan perspective before examination this debate any further.

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<sup>p</sup> “Mercury poisoning is responsible for the “Mad Hatter Syndrome.” Its basis was the use of mercuric nitrate in the 18th & 19th century by English hat makers to soften the outer stiff hairs of felt. In the old medical literature, chronic mercury poisoning in the folks who were “Mad as a Hatter,” lead to behavioral changes such as “accessive embarrassment”, timidity, withdrawal, fatigue, insomnia, hallucinosis & dispondancy.” (O’Carroll 8/12)

<sup>61</sup> O’Carroll 8/12; <http://www.epa.gov/mercury/exposure.htm>

## Mercury In Tibet

“The *rGyud-bZhi* says there is nothing on Earth that has no medicinal value,”<sup>62</sup> from the most basic elements to the most deadly poisons. This teaching evolved from the belief that all matter on earth, including the “physique of sentient creatures” is composed of the same five basic elements: earth, water, fire, wind, and space; the qualities of which are responsible for the material aspects of the three humors.<sup>63</sup> Tibetan pharmaceuticals are created according to very strict guidelines and specific recipes. Ingredients are broadly classified into three main groups: vegetable products, minerals/metals/precious stones, and animal products.<sup>64</sup> Beyond preparing the desired drugs, each ingredient must be prepared, refined, and purified (in every sense of the word). Faith in these purification procedures (which are indeed ‘heavy’ on ritual) springs from the *tantric* roots of Tibetan medicine.

Buddhist *tantra* incorporates the belief that anything can be transformed into something pure or holy, even substances which would otherwise be deadly.<sup>65</sup> This tradition maintained a specific fascination with sexual fluids “as (generally internalized) power substances.”<sup>66</sup> During its development, another tradition, the alchemists of medieval India, were also interested in sexual fluids which they believed reflected states of metal and discovered the perfect mineral counterparts for human fluids: sulfur and mica for female and mercury for male.<sup>67</sup> The metal’s astonishing, almost unworldly chemical properties fascinated scientific and religious thinkers alike, especially its ability to seemingly absorb other substances as if in Tantric practice. It was believed mercury had the ability to “drive away disease”<sup>68</sup> and lengthen life, but its toxicity demanded recognition as well. Thus, Tantric ritual, along with numerous alchemical techniques, was incorporated in order to aid in purifying the precious, but

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<sup>62</sup> Men-Tsee-Khang pg. 66

<sup>63</sup> *ibid* pg. 67; Dash pg. xx

<sup>64</sup> Dash pg. xxiv

<sup>65</sup> Lopez 29/10

<sup>66</sup> White pg. 5

<sup>67</sup> *ibid*

<sup>68</sup> *ibid* pg. 6

toxic metal, in theory dispelling all poisons and leaving only the pure element. Today, the mineral is believed to cure a wide range of nervous disorders from nerve damage, to memory loss, even paralysis and infection, but only if properly purified according to painfully meticulous guidelines.<sup>69</sup>

The *rGyud-bZhi* provides an eighteen-step purification process<sup>υ</sup> aimed at both refining the element and removing any contaminants, and purifying (or ‘detoxify’) the mercury itself.<sup>70</sup> Each step is revolves around a physical treatment and includes some of the rituals, and various Buddhist prayers and mantras associated with purification<sup>σ</sup>.<sup>71</sup> As this form of “detoxification” is as of yet unproven by western standards, it is thereby irrelevant according to western laws; to them, the purified form is just as poisonous and according to Dr. Phillip O’Carroll and prominent Neurosurgeon at Hoag Hospital in Newport Beach, CA “The bottom line is all mercury is toxic.”<sup>72</sup> Yet, while Jurgen C. Aschoff, a prominent Tibetan scholar, worked with Tibetan physicians, he observed that the “processes unequivocally lead to the elimination of impurities trough mechanistic treatment of the mercury.”<sup>73</sup> Additionally, from chemical perspective, many of the ‘purification techniques have the potential to effect the chemical composition of the compound. Interestingly, sulfur, the female essence in the alchemist tradition, is the most significant ingredient in the process. Chemical analysis of ‘purified’ mercury in pills of *DschuMar 25* revealed that most of the metallic mercury (Hg) had in fact been converted into “inert and therefore non-toxic Mercuric Sulfide”<sup>74</sup> (HgS) commonly known as cinnabar. However, tests also revealed that roughly 10-30% (depending on the medicines source) of the total mercury in each pill remained metallic mercury (around 5gm).<sup>75</sup> The EPA set safe weekly limits of

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<sup>69</sup> Saanga 19/11

<sup>υ</sup> *While all 18 steps are recommended, only the first 8 are required, a detailed explanation of which is available in appendix 6.*

<sup>70</sup> Dash pg. 229

<sup>σ</sup> *I have chosen not to include any examples of mantras both out of respect for the tradition and beliefs revolving around hard copix of such mantras, and the advice and wishes of my consultants.*

<sup>71</sup> Tsepak 25/11

<sup>72</sup> O’Carroll 8/12

<sup>73</sup> Aschoff

<sup>74</sup> ibid

<sup>75</sup> ibid

mercury exposure at a maximum of 0.3mg<sup>76</sup>. Thus, every ‘precious pill,’ on average, contains roughly 17 times the recommended exposure levels (pills are often prescribed to be taken 2-3 times a week for months at a time).<sup>77</sup> Furthermore, when asked about the converted cinnabar, Dr. O’Carroll admitted “mercury sulfide, being an inorganic form, is less toxic than elemental mercury” as it disassociates more slowly in body fluids, but stood by the fact that “mercury in all its forms organic or inorganic ingested or inhaled can cause multi organ damage... the probability is [simply] less with mercury sulfide as it is one of the least absorbed forms.”<sup>78</sup>

However, of the multiple physicians I consulted, each insisted they have never observed the typical side effects of mercury intoxication, in any patients treated with mercury-containing medication.<sup>79</sup> Although the majority had only their experience to recall, Dr. Yangzom provided detailed records of multiple treatments being administered over long periods. At every ‘check-up’ symptoms were re-evaluated and recorded. After reviewing a number of cases, we found no signs of intoxication<sup>80</sup>. To date, neither the beneficial nor detrimental effects of mercury as a healing agent have been scientifically proven (by western standards), nor are they likely to any time soon. From the Tibetan perspective, animal testing would be ridiculous, as medication is designed for and applies only to human anatomy.<sup>80</sup> In the west, human trials are out of the question, as administering a known toxic substance to patients would be unethical and illegal. The pharmaceutical debate is a perfect reflection of the Tibetan relative lack of scientific method in their approach to health care and the allopathic over-dependence on it. Sadly, neither community admits to any fault in their methods, and thus constitutes the core conflict in this clash of traditions.

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<sup>76</sup> Although this refers exclusively to inhaled metallic mercury vapor. Dietary restrictions are based on parts per million and refer to methyl mercury, not the ‘purified’ element (because most people don’t ingest pure mercury)

<sup>77</sup> <http://www.epa.gov/mercury/exposure.htm>

<sup>78</sup> Aschoff; Yangzom 27/11

<sup>79</sup> O’Carroll 8/12

<sup>80</sup> Jimmy Lama 17/11; Tsepak 22/11; Saanga 18/11; Yangzom 27/11

<sup>80</sup> Neither of us are trained in allopathic medicine

<sup>80</sup> Jimmy Lama 18/11

# Part IV

## Same, Same, But Different:

### A Brief Comparison of the Tibetan and Allopathic Methods

At first glance, one can easily see the stark differences in the methods in which these two traditions approach *Tsakar*/tremors. From concepts of disease to treatments, parallels may be difficult to detect, but the disparities are obvious, and it requires an open mind and careful thought to reveal that but both are at hand and potentially invaluable.

#### **Cause**

While westerners obsess over individual functions at the cellular level, and Tibetans prefer the more holistic approach, both communities reach the same general conclusions: wherever *Tsakar*/tremors appear, the problem finds its root (ultimately) in the brain. Additionally, although Tibetans use the term ‘root’ quite literally, allopathics must appreciate the metaphor as well as the astonishingly accurate understanding of the nervous system despite any forms of synthetic diagnostic equipment or any records of formal autopsy.<sup>81</sup> Both systems readily acknowledge that the brain controls all functions throughout the body, and that specific regions of the brain correspond to each different function. But comparisons don’t end with defining the disease.

#### **Diagnosis**

With regards to diagnosis, the Tibetan tradition is in danger of displaying some reductionist characteristics. When we observe the methods of diagnosis, both by location and humoric characteristics, it’s apparent that Tibetan medicine identifies twelve different forms of the disease,

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<sup>81</sup> Finckh pg.10

compared to the ten in allopathic definitions.<sup>82</sup> Additionally, any disease may manifest itself in four different forms, what we in the west refer to as a rating of severity, just as allopathic physicians use to characterize tremors. Yet, the west believes the disease can be isolated and contained, while Tibetans attempt to reincorporate an imbalance back into proper synergy, which leads to seemingly stark contrasts in treatment.

## **Treatment**

Skeptical allopathics are quick to crucify Tibetan treatments citing lack of conclusive data and clinical trials, while attacking the idea of using poisons in medicine. This turns out to be an interesting approach when we take into consideration the use of botulinum toxins in treating many diseases, including, more recently, tremors.<sup>83</sup> In addition, how many toxic and poisonous materials are used every day in pharmaceutical laboratories, any one of which, if isolated, could be lethal, yet when properly combined form our common and life-saving medications. How different are Tibetan purification processes from formulas followed by drug manufacturers? Furthermore, even in their ‘safe,’ processed forms, allopathic medicines can be poisons in themselves. Many of the ‘side effects’ of tremor therapies are identical or worse to symptoms of mercury intoxication. The intention here is neither to vilify one tradition nor commend the other but simply to illustrate the fact that differences are inherent, and should be investigated, not rejected.

Ultimately, it is the combination of these parallel and contrasting elements which will prove most beneficial in the future.

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<sup>82</sup> Tsepak 22/11

<sup>83</sup> Sweeny; [http://www.wemove.org/et/et\\_odt.html](http://www.wemove.org/et/et_odt.html)

## East Vs. West: Final Conclusions

What can we deduce from this analysis? What conclusions and suggestions can we draw? It is clear that each tradition carries with it great benefits, as well as regrettable failings; obvious and subtle alike. First, there is no question as to whether or not Tibetan medicine is effective. For over 2500 years it has withstood the tests of time, criticism, and personal testament. And even if its effects are purely psychological, as some critics claim, effects are seen regardless; shouldn't that fact in itself be reason enough to encourage further understanding of the tradition? Still, the world of western science demands documentation. So why don't Tibetan clinics simply start keeping records? Dr. Jimmy Lama explains that records are unnecessary in Tibetan culture. The effectiveness or failures of treatments were observed and then shared among peers and passed down orally through the generations. Physicians "shouldn't be prideful [due to of successes] or sad [because of failures]" as long as they did their utmost to heal.<sup>84</sup> Therefore, no reason existed to falsify their experiences. As a result, it is conceivable that record keeping might even take on a negative connotation, implying that a physician wanted to prove his skill. Jimmy Lama went on to explain that, as every patient is unique and treatment may only be administered on an individual level, each physician is practically required to treat each case differently, and thus records seem of little use.<sup>85</sup> However, no one can convincingly argue against the invaluable benefits posed by records and provided to everyone from patient, to researchers, to physicians alike. It is these records that have facilitated the rapid evolution of allopathic medicines. The information provided allows us to look back and process and analyze our decisions. The subsequent knowledge makes it possible to constantly develop new and better means of addressing old dilemmas. Dr. Yangzom, as previously mentioned, is one of the few Tibetan medical practitioners today who maintains accurate records, but the number is growing. She insists such data is vital to accurately trace the effectiveness of treatment, even citing a time when she used her records to

convince her peers that *Dhali 18*, a medication traditionally used for tremors and spasms, showed very positive effect on kidney function.<sup>86</sup>

Conversely, allopathic medicine has no shortage of failures of its own. Let's contemplate the Tibetan belief in the uniqueness of every patient. Although some in the west consider it a 'less than scientific approach,' others find it quite refreshing. An editorial in the August 10 1984 New York Times described a growing trend of Americans "groping for some extra dimension in health care," and general dissatisfaction with a "purely scientific approach to healthcare."<sup>87</sup> Compared to the Tibetan tradition where "compassion is the root of cure,"<sup>88</sup> western medicine today falls drastically short in the realm of patient/doctor relationships. House calls and personal physicians are virtually non-existent today as patients are passed off from specialist to specialist, and treatment is restricted to affordability and the names provided on a list by tight-fisted insurance companies. While western medicine is plagued by bureaucracy, economics, and an obsession with the scientific method; allopathic physicians would do well to remember that even the Hippocratic Oath recognizes spirituality and compassion as basic and necessary medical skills.

So, what to do? We have at our disposal two great, but seemingly opposing healing traditions. With careful analysis, though, it's apparent that where one fails, the other succeeds. Where Tibetans lack science and speed, allopathics can provide technology and efficiency. Where the west lacks compassion and knowledge, Tibetans offer humility and perspective. The two systems compliment each other perfectly. In a field where holistics are left with few options, western trauma care is second to none. And with regards to chronic illness, Tibetan medicine is decades ahead. With an understanding that harsh and invasive "quick fixes" are superficial at best, the Tibetan tradition offers persistent and effective cures, rather than a 'chronic' treatment. But again, each has its strengths,

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<sup>84</sup> Jimmy Lama 18/11

<sup>85</sup> ibid

<sup>86</sup> Yangzom 27/11

<sup>87</sup> Drummer pg. 123

<sup>88</sup> Tsepak 20/11

which leaves us with enormous healing potential. Jimmy Lama put it perfectly when he described the problem of migraines. If he has to work and needs quick relief, he takes an aspirin without question, but knows that won't stop the headaches from returning later. On the other hand, Tibetan treatment will end the attacks, but may take days or weeks and are less readily available to most of the world.<sup>89</sup> So why not take both? One could administer allopathic treatment to immediately relieve symptoms (especially debilitating ones as presented by *Tsakar*/tremors) thereby eliminating, or at least diminishing, the problem and simultaneously begin Tibetan therapy to slowly degrade the cause. Every Tibetan physician consulted, and even His Holiness the Dalai Lama, agree such an approach of “combination therapy” is in everyone's best interest (although Jimmy Lama recommended administering different treatments at least an hour apart).<sup>90</sup> And such treatment is becoming more widely available. The *Saychen* clinic in Kathmandu, Nepal offers an amalgamation of treatments from Tibetan, Chinese, Nepali, and Indian medical practitioners. With the low cost and lack of side effects (accepted in the majority of treatments) it seems there is no reason for the allopathic system to bar the incorporation of Tibetan medical theories and practices. And, hope exists, as Dr. Michael Brant-Zawadzki explains “while most practicing doctors don't put much value on alternative medicine, many acknowledge medicine's effectiveness includes the ‘art’ of medicine, placebo effects, and that there's less science to what we do than we'd like.”<sup>91</sup> Similarly, due to recent growing interests in alternative approaches and scientific backing for others (e.g. acupuncture, meditation, etc) some institutions have begun investigating potentially useful methods. Some major universities are even developing programs in alternative or “integrative” medicine. Yet the majority of the western world remains skeptical. Dr. Dave Krakow at the CIWEC clinic (an allopathic institution) in Kathmandu is slightly reluctant to refer patients to widely available holistic treatments, not because he disapproves, but simply because he is

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<sup>89</sup> Jimmy Lama 17/11

<sup>90</sup> Jimmy Lama 17/11; Tsepak 22/11; Saanga 18/11; Yangzom 27/11

<sup>91</sup> Brant-Zawadzki 27/11

unsure of their effectiveness.<sup>92</sup> Western science is still too hesitant to accept that which they can't see and physically demonstrate and define by objective terms. Even the 'mundane' level of Tibetan medicine is endlessly intertwined with religious principal, thought, and theory that western science may never recognize. Most allopathics cling so desperately to their foundation in physical mechanics and logic that western science has forgotten what it is to sense the unimaginable, the unexplainable; the very notion that science is born of. Today, when such unexplainable events occur such as 'miraculous' healings provided by a hardly understood tradition, they aren't considered and investigated, but quickly dismissed as 'impossible' or 'bullshit' simply due to our inability to explain them according to our own comfortable terms and theories. For now, it seems that the gap between traditional Tibetan medical practice and the modern allopathic treatment system of medicine may only be bridged when Tibetan medicine can comfort the western world by demonstrating a little more 'science' in their methods and when the allopathic of the west can summon the courage to have a little more faith.

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<sup>92</sup> Krakow

# Part VI

## Methodology

### **My Methods:**

Over the past month, my research consisted of multiple in-person interviews, as well as interviews conducted over the phone and via email. When I began looking for contact, I had a very difficult time locating any Tibetan physicians who were interested in speaking with me. Due to the nature of the disease I studied, I started at the *gyenso khang* (old folks home) asking about which physicians treated patients there. The doctor they referred me to had just left for Switzerland, and wouldn't return until my research period had ended. So, I combed the phone book for clinics, but each call got the same general response (ranging from a gentle 'no' to simply getting hung up on). After calling every Tibetan clinic in Kathmandu, I was about to give up when I decided to just go in person and ask again. To my surprise I was granted an interview on my first try with Dr. Saanga at the Saychen clinic (accidentally meeting his wife on the way there helped too). While at first he was skeptical, I think that when he saw my genuine interest in the subject he opened up and became an integral source. Inspired by my success, I walked (crutched actually) into the Kailash clinic and had an identical experience with Jimmy Lama. While the phone calls were useless, it taught me the best way to get things done is to do them in person. Unfortunately, I didn't have as much success in getting samples of Dschu-Mar 25 analyzed in a lab. After spending weeks tracking down what seems to be the one lab in Kathmandu equipped to test for mercury, they denied my request (the military hospital isn't too keen on foreign visitors). Luckily I obtained data from an analysis performed about ten years ago, but having my own, recent lab data would have been much more preferable.

## **Suggestions for Future Research:**

As I said in my methods, my biggest advice, no matter what you're researching, is never take 'no' for an answer (but don't be rude about it), and do whatever you can to demonstrate your commitment to the subject. As for research topics, a study focusing on a certain aspect of Tibetan medical practice, such as Pulse Reading (Sphygmology), or Urine analysis would be very interesting and I assure you, there enough depth and history in these practices to satisfy hundreds of pages of research. Another topic which I wish I could have spent more time on is the different Tibetan medical histories. There are definitely two succinct levels of the history of the practice: a religious history and (somewhat) recorded history. But even recorded medical history is fairly unclear, and looking into the roots of the practice in more detail could be very interesting. Finally, don't forget to use every resource available to you, especially local people. Even casual conversations I had with my landlords, shopkeepers, and friends opened up whole perspectives which I had never considered.

## Works Referenced

### **Electronic**

1. Aschoff, Jurgen C. "Tibetan Medicine and Mercury." NeruoWeb Forum (1996). Massechusets General Hospital Neruology Services. 14 Nov. 2005 <<http://neuro-www.mgh.harvard.edu/neurowebforum/GeneralFeedbackArticles/TibetanMedicineandMercury.html>>.
2. Dubuc, Bruno. "Making a Voluntary Movement." The Brain from Top To Bottom. Sept. 2002. Canadian Institute of Nerosciences, Menta Health, and Addiction. 22 Nov. 2005 <[http://www.thebrain.mcgill.ca/flash/d/d\\_06/d\\_06\\_cr/d\\_06\\_cr\\_mou/d\\_06\\_cr\\_mou.html](http://www.thebrain.mcgill.ca/flash/d/d_06/d_06_cr/d_06_cr_mou/d_06_cr_mou.html)>.
3. Dubuc, Bruno. "The Motor Cortex." The Brain from Top To Bottom. Sept. 2002. Canadian Institute of Nerosciences, Menta Health, and Addiction. 22 Nov. 2005 <[http://www.thebrain.mcgill.ca/flash/i/i\\_06/i\\_06\\_cr/i\\_06\\_cr\\_mou/i\\_06\\_cr\\_mou.html](http://www.thebrain.mcgill.ca/flash/i/i_06/i_06_cr/i_06_cr_mou/i_06_cr_mou.html)>.
4. Duma, Dr. Christopher. "Deep Brain Stimulation (DBS) Tremor Control Therapy." CDuma.com. 2005. 21 Nov. 2005 <[http://www.cduma.com/spdmd\\_proc.html](http://www.cduma.com/spdmd_proc.html)>.
5. Freudenrich, Ph.d., Craig C. "How Muscles Work." 23 Nov. 2005 <<http://science.howstuffworks.com/muscle2.htm>>.
6. Freudenrich, Ph.d., Craig C. "Basic Neuron Types." How Stuff Works. 23 Nov. 2005 <<http://science.howstuffworks.com/brain2.htm>>.
7. Joseph V. Campellone, Joseph V. "Essential Tremor." Medline. 9 Nov. 2005. Medline. 17 Nov. 2005 <<http://www.nlm.nih.gov/medlineplus/ency/article/000762.htm#Treatment>>.
8. "Mercury: Human Exposure." Environmental Protection Agency. 28 July 2005. 29 Nov. 2005 <<http://www.epa.gov/mercury/exposure.htm>>.
9. "Other Drug Therapies" WeMove.org. 20 Jan. 2005. 22 Nov. 2005 <[http://www.wemove.org/et/et\\_odt.html](http://www.wemove.org/et/et_odt.html)>.
10. Office Of Communications And Public Liaison. "NINDS Tremor Information Page." National Institute of Neurological Disorders and Stroke. 4 Mar. 2005. National Institutes of Health. 24 Nov. 2005 <<http://www.ninds.nih.gov/disorders/tremor/tremor.htm>>.
11. "Pharmacologic Treatments." WeMove.org. 20 Jan. 2005. 22 Nov. 2005 <[http://www.wemove.org/et/et\\_pt.html](http://www.wemove.org/et/et_pt.html)>.
12. Sweeney, Patrick J. "Tumors." Disease Management Project. 28 Mar. 2005. Cleaveland Clinic. 18 Oct. 2005 <<http://www.clevelandclinicmeded.com/diseasemanagement/neurology/tremor.htm>>.

### **In-Print**

13. Bain, P G., et. Al . "Assessing tremor severity." J Neurol Neurosurg Psychiatry 56 (1993): 867-873. PubMed. 20 Nov. 2005.
14. Dash, Vaidya B. Pharmacopoeia of Tibetan Medicine. Delhi: Sri Satguru Publicationsq, 1994. xix-301.
15. Drummer, Tom. Tibetan Medicine and Other Holistic Health-Care Systems. New Delhi: Paljor Publications, 1994. 3-306.
16. Finckh, Dr. Elisabeth. Studies In Tibetan Medicine. 1st ed. Ithica: Snow Lion Publications, 1988. 7-73.
17. Khangkar, Lbsang D. Lectures On Tibetan Medicine. Dharamsala: Library of Tibetan Works and Archives, 1986. 1-218.
18. Men-Tsee-Khang: Tibetan Medical & Astrological Ins. Fundamentals of Tibetan Medicine. 4thth ed. Dharamsala: Men-Tsee-Khang, 2001. 1-130.
19. White, David G. The Alchemical Body: Siddha Traditions in Medieval India. Chicago: University of Chicago P, 1998. 1-614.

### **Other**

20. Lopez, Manuel. "Lecture on Buddhist Tantra." S.I.T. Gongpo Campsite, Tibet. 29 Oct. 2005.

## Contacts

1. Brant-Zawadzki, Dr. Michael. Personal Interview. 27 Nov. 2005

Contact at: Hoag Memorial Hospital, Newport Beach, CA

Phone: 1-949-764-5642

Email: mbrant@hoaghospital.org

2. Dhakpa, Dr. Ngawang (a.k.a. Jimmy Lama). Personal interview 17,18 Nov. 2005

-

Contact at: Kunphen Medical Center, Chhetrapati, Kathmandu, Nepal

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Phone: 977-1-425-1920

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3. Krakow, Dr. Dave. Casual conversation. 23 Nov. 2005

Contact at: CIWEC Medical Clinic, Lazimpat, Kathmandu, Nepal

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4. O'Carroll, Dr. Phillip. Personal Interview. 8 Dec. 2005

Contact at: Hoag Memorial Hospital, Newport Beach, CA

Email: POcarr5739@aol.com

5. Saanga, Dr. Personal interview, translated by Kelsang Dorjee. 16,18,19 Nov. 2005.

-Dr. Saanga:

-Kelsang Dorjee:

Contact at: Saychen Medical Clinic, Bouddha, Kathmandu, Nepal

Phone: 977-1-448-7924

6. Tsepak, Dr. Personal interview. 20,22,25 Nov. 2005.

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Contacted at: Sorig Clinic, Bouddha, Kathmandu Nepal (when last contacted, was moving to New York)

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Tsepak73@hotmail.com

7. Yangzom, Dr. Dickyi. Personal interview. 27 Nov. 2005.

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Contact at: Kunphen Medical Center, Chhetrapati, Kathmandu, Nepal

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## Appendix 1: Tibetan Spellings:

- Tsakar: The white nerve disease  
-
- rGyud-bZhi: The Four Tantras/Treatises of Tibetan medical practice  
-
- rlung: Wind  
-
- Thre-pa: Bile  
-
- Bad-kan: Phlegm  
-
- Ded-Chags: attachment  
-
- Zhe-dsang: hatred  
-
- GTi-mug: delusion  
-
- Kyen: secondary cause of disease  
-
- Kyu: Primary cause of disease  
-
- Tsa-nye: Nerves  
-
- Soktsa: Root of nerves  
-
- Toksa: over exertion  
-
- Rimdoh: result of epidemic disease  
-
- Tso-pa: fever  
-
- Tson: a wound inflicted by a weapon

- 
- Lung-Tuk: when the body is shaken
- 
- Chi: general structure of disease
- 
- Chetak: Specific Structure of Disease
- 
- Go: head
- 
- Chanko: body/torso
- 
- Yang-la: limbs
- 
- Tuba: a combination of the three humors
- 
- Neh: a location in the body
- 
- Kuya: cloudy aspect found in the urine of a patient afflicted with disease
- 
- Sorig: good health
- 
- Cho Long Me Pa: a disease which is very difficult to cure
- 
- Che: Tibetan acupuncture
- 
- Kailash:
- Kunphen:
- Tantra/Tantric:
- Gyenso Khang: Old folks home
-

## **Appendix 2: Allopathic Definitions of Tremor**

### *Causes*

#### **Physiological Tremor**

This is a very-low-amplitude fine tremor (between 6 Hz and 12 Hz) that is barely visible to the naked eye. It is present in every normal individual during maintaining a posture or movement. Neurologic examination results of patients with physiologic tremor are usually normal.

#### **Enhanced Physiologic Tremor**

This is a high-frequency, low-amplitude, visible tremor that occurs primarily when a specific posture is maintained. Drugs and toxins induce this form of tremor. The suspected mechanism is mechanical activation at the muscular level. Signs and symptoms of drug toxicity or other side effects may or may not be present. Tremor symptoms may improve after discontinuation of the causative agent.

#### **Essential Tremor**

Essential tremor is the most common form of all movement disorders. Classical essential tremor is predominantly a postural- or action-type tremor and usually patient has positive family history of tremor. Drinking alcohol often temporarily reduces the tremor. Other associated symptoms may include mild gait difficulty and, as a group, patients with essential tremor have increase hearing disability compared to controls or patients with Parkinson's Disease. The degree of hearing impairment seems to correlate with the tremor severity.

#### **Parkinson's Tremor**

This is a low-frequency rest tremor typically defined as a pill-rolling tremor. In some patients, postural and action tremor may also occur. Parkinson's tremor usually occurs in association with other symptoms, such as micrographia, slowness (bradykinesia), and rigidity. Usually, there is no family history of Parkinson's tremor, and alcohol consumption does not decrease movement

#### **Cerebellar Tremor**

Cerebellar tremor is a low-frequency (less than 4 Hz) intention tremor that usually occurs unilaterally. Common causes are multiple sclerosis, stroke, and cerebellar injury. Signs and symptoms of cerebellar dysfunction may be present, including ataxia, dysmetria, dysdiadokinesia and dysarthria.

#### **Holmes' Tremor**

The term *Holmes' tremor or rubral tremor* designates a combination of rest, postural, and action tremors due to midbrain lesions in the vicinity of the red nucleus. This type of tremor is irregular and slow frequency (4.5 Hz). Signs of ataxia and weakness may be present. Common causes include cerebrovascular accident and multiple sclerosis, with a possible delay of 2 weeks to 2 years in tremor onset and occurrence of lesions.

#### **Drug-induced Tremor**

Types of tremors induced by drugs include enhanced physiologic tremor, rest tremor, and action tremor. Signs and symptoms of drug-induced tremors depend on the drug used and on a patient's predisposition to its side effects. Some drugs cause extrapyramidal side effects manifesting as bradykinesia, rigidity, and tremor. It has recently been observed that tremor reappears in Parkinson's patients treated with cholinesterase inhibitors reinforcing the observation that anticholinergic agents are very effective in ameliorating the tremor of Parkinson's Disease.

#### **Tremor Due to Systemic Disease**

Tremor due to systemic disease usually occurs when the patient is moving or assumes a specific position. Associated symptoms include asterixis, mental status changes, and other signs of systemic illness. Diseases such as thyrotoxicosis and hepatic failure as well as delirium tremens and drug withdrawal are among the common causes.

### **Psychogenic Tremor**

Psychogenic tremor may involve any part of the body, but it most commonly affects the extremities. Usually, tremor onset is sudden and begins with an unusual combination of postural, action, and resting tremors. Psychogenic tremor decreases with distraction and is associated with multiple other psychosomatic complaints.

### **Orthostatic Tremor**

Orthostatic tremor is considered to be a variant of essential tremor. This type of tremor occurs in the legs immediately on standing and is relieved by sitting down. Orthostatic tremor is usually high frequency (14 Hz to 18 Hz), and no other clinical signs and symptoms are present.

### *Manifestations:*

- **Rest or Resting Tremor**  
Resting tremor occurs when a body part is at complete rest against gravity. Tremor amplitude decreases with voluntary activity.
- **Postural Tremor**  
Postural tremor occurs during maintenance of a position against gravity and increases with action.
- **Action or Kinetic Tremor**  
This form of tremor occurs during voluntary movement
- **Task-specific Tremor**  
This tremor emerges during specific activity. An example of this type is primary writing tremor.
- **Intention or Terminal Tremor**  
Intention tremor manifests as a marked increase in tremor amplitude during a terminal portion of targeted movement. Examples of intention tremor include cerebellar tremor and multiple sclerosis tremor.

### *General Cases*

**Definite essential tremor:** Postural tremor in the arms which increases during action in the absence of any condition or drug known to cause enhanced physiological tremor and in the absence of cerebellar symptoms and signs, and in the absence of PD and dystonia. Head tremor may or may not be present.

**Probable essential tremor:** Postural tremor in the arms without increase during action in the absence of any condition or drug known to cause enhanced physiological tremor and in the absence of cerebellar symptoms and signs, and in the absence of PD and dystonia. Vocal and head or neck tremor in the absence of any condition or drug known to cause enhanced physiological tremor and in the absence of cerebellar symptoms and signs, and in the absence of PD and dystonia.

**Possible essential tremor:** Postural tremor in the arms and action tremor in arms in the absence of any condition or drug known to cause enhanced physiological tremor and in the absence of cerebellar symptoms and signs, but in the presence of PD and dystonia.<sup>93</sup>

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<sup>93</sup> Sweeney

## **Appendix 3: Western Drugs Used in Tremor Therapy**

### **First-line drug therapies for the treatment of ET include...**

#### **-Propranolol (Inderal®):**

The response of ET symptoms to treatment with the beta-blocker propranolol is highly variable. Beta-adrenergic blockers are a class of drugs that inhibit response to adrenergic stimulation by blocking B-adrenergic receptors in heart muscle and other smooth muscle. Blockage of this stimulation effectively results in a decrease in heart rate and cardiac output as well as a reduction in blood pressure. Approximately 50% to 70% of patients obtain some symptomatic relief. However, only in rare cases is the tremor totally suppressed. Beta-adrenergic blockage helps to control the involuntary, rhythmic movements of ET. Tremor amplitude is usually decreased; however, the frequency of tremor usually remains unaffected. The average reduction in tremor is about 50% to 60%. As the severity of the tremor lessens, functional disability also diminishes. However, some individuals will not respond to propranolol and the drug is often not well tolerated in older individuals.

The typical beginning oral dosage of propranolol is 40mg twice a day. The dosage may be gradually increased as needed to 120-320 mg/day in 2 to 3 divided doses. Propranolol and other beta-blockers may not be appropriate for patients with asthma, certain heart problems (e.g., advanced AV block, severe bradycardia, congestive heart failure, etc.), poorly controlled diabetes mellitus, pulmonary disease, or peripheral vascular disease (e.g., Raynaud's or Buerger's disease). Possible side effects of propranolol therapy include dizziness, fatigue, depression, diarrhea, nausea and vomiting, changes in blood sugar levels, or sexual difficulties. Other more serious side effects (particularly in susceptible patients with other preexisting medical conditions) may include difficulty breathing, sinus bradycardia, and hypotension.

Patients should not abruptly discontinue their treatment with a beta-adrenergic blocking agent such as propranolol. Physicians typically work with patients to establish a schedule of a gradual reduction in dosage. In this way, patients are slowly weaned from the medication. Because propranolol may interact with certain other drugs (e.g., anti-hyperglycemic and antihypertensive agents, barbiturates, NSAIDS, etc.), it is also important that the treating physician review the patient's current and recent past drug regimen.

#### **-Primidone (Mysoline®):**

Primidone, an anticonvulsant medication related to phenobarbital, slows the central nervous system and helps to reduce or control seizure activity in certain types of epilepsy. In addition, primidone is considered a first-line therapy for the treatment of patients with essential tremor. The starting dosage for primidone is low (e.g., 25 mg) and raised very slowly as needed. Two formulations of primidone are available; namely, 50mg and 250mg. Most clinicians recommend that patients start with half of a fifty tablet of primidone. The maximum dosage is 750 mg/day in three divided doses. However, 150 mg to 300 mg, in a single or divided doses appears to be an effective dose that may work as well as higher doses.

Six studies have been conducted to determine the rate of response to primidone. These studies reported varied rates ranging from a 60% to a 100% response. However, some patients will not respond to primidone therapy. One report estimated that about 71% of patients respond positively to primidone. Patients should not abruptly discontinue therapy with primidone. After consultation with a physician, the dosage is reduced gradually.

When treatment with primidone is initiated, some patients experience an acute idiosyncratic toxic response to the drug. Symptoms of this type of reaction may include nausea, vomiting, fatigue or sleepiness, confusion, and ataxia. This initial toxicity may occur in as many as 20% of patients. These symptoms typically resolve in one or two days.

Additional possible side effects of primidone include vertigo, unsteadiness, irritability, blurred vision, loss of appetite, or decreased sexual function. Primidone should be taken with meals to help minimize gastrointestinal (GI) effects such as indigestion and GI irritation. These side effects are typically short-lived and disappear with continued therapy. Side effects of chronic therapy are usually minimal and infrequent.

#### **Drug Tolerance:**

Some patients may develop a tolerance for propranolol and primidone over time, although no controlled studies have been conducted to support this view. However, propranolol and primidone are effective long-term therapy for some patients with ET. Acute adverse reactions to initiation of primidone therapy and side effects with chronic use of propranolol may hinder continued therapy in some patients.

Combination drug therapies:

Primidone and propranolol may be used in combination if they have not sufficiently reduced symptoms when used alone. In such cases, primidone is usually prescribed at 25mg at bedtime. The dosage is then increased gradually to 250 mg/day. Propranolol is then added to the drug regimen, usually at 40 mg three times per day. Propranolol dosage may be increased to a maximum of 320 mg/day if the response remains inadequate. Alternatively, a long-acting formulation of propranolol may be substituted if once-daily administration is desired. One study reported that the combination of propranolol and primidone was more effective in treating the symptoms of ET than the individual use of either drug.<sup>94</sup>

### **Other Drug Therapies**

Second-line drug therapies for the treatment of ET include benzodiazepines, a class of drugs that interferes with chemical activity in the nervous system and brain, serving to reduce communication between nerve cells and to a "slowing down" the central nervous system. Such medications promote sleep, relieve anxiety, reduce restlessness, and relax muscles. Examples of benzodiazepines that have been used to treat patients with ET include clonazepam (Klonopin®), lorazepam (Ativan®), alprazolam (Xanax®), and diazepam (Valium®).

Nadolol (Corgard®) is a nonselective, beta-adrenergic receptor antagonist that is similar to propranolol. It may be an effective treatment for individuals with ET who were previously responsive to propranolol.

Methazolamide (Neptazane®) has been studied and seems to have limited usefulness in the treatment of essential head and voice tremor. Side effects may include drowsiness, nausea, stomach discomfort, paresthesias, or loss of appetite. The drug gabapentin (Neurontin®) has also been studied in a double blind, controlled trial for its effectiveness in the treatment of ET. The results suggested that, as an adjuvant therapy, gabapentin has limited benefit in patients with ET.

Topiramate (Topamax®). According to the results of a randomized clinical, topiramate (Topamax from OrthoMcNeil) effectively reduces tremor. Twenty-four patients with ET received either placebo (no drug) or topiramate. The dose was gradually increased to 400 mg/day over at least 8 weeks. This was followed by a 2-week period without drug or placebo and then reassignment to the other arm of the study. Fifteen patients completed the trial; six patients withdrew while on topiramate (two for dizziness or disorientation) and three patients withdrew while on placebo (one for failure to take the placebo as directed one for memory problems and ataxia). In the 15 patients who completed the study, the mean final dose was 333 mg/day. Topiramate treatment improved tremor scores by approximately 25%; placebo improvement was approximately 1%. Improvements remained significant for all scores except functional disability (p=.06).

Selected patients with ET who do not respond to drug therapy may receive local injections of botulinum toxin (BTX) type A (Botox®). Some improvement in symptoms has been noted. Chemodenervation with BTX may significantly ameliorate essential hand tremor in patients who fail to improve with conventional pharmacologic therapy. A small, randomized study compared the relative effectiveness of propranolol or gabapentin (Neurontin®) against a placebo. Treatment with propranolol or gabapentin yielded improvement in symptoms as measured by the Tremor Clinical Rating Scale (TCRS including clinical examination, motor task performance, ADLs, and subjective assessment), accelerometry, and a patient-reported disability scale. The results suggest that gabapentin may have a role in the treatment of ET; however, more studies are needed to determine the long-term safety and efficacy of gabapentin for the treatment of individuals with ET.<sup>95</sup>

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<sup>94</sup> [http://www.wemove.org/et/et\\_pt.html](http://www.wemove.org/et/et_pt.html)

<sup>95</sup> [http://www.wemove.org/et/et\\_odt.html](http://www.wemove.org/et/et_odt.html)

## **Appendix 4: Tibetan Medical Theories, Structure, and more**

### **-The 9 Fatal Conditions:**

“The nine fatal conditions (incurable illnesses which lead to biological dissolution death are:

1. When the life force is expended – that is, in a natural sense – for example, the natural demise of a relatively healthy person
2. The situation where as soon as one serious disease is arrested, another takes its place. Irreversible biological dissolution as a result of a long-term pathological evolution. The person is in a terminal state. In a Tibetan Medical context this is usually due to the effect of extreme hot and cold conditions
3. The incapacity of the organism to respond to the usual medicines or treatment which would normally arrest or reverse the particular illness. Instead, treatment produces the opposite effect, that is aggravation
4. As a result of trauma and particular wounding which involve the severance of nerves and blood vessels, or as the Tibetans would say – ‘the nerve of life’ is cut
5. When pathological processes have progressed to the point, i.e. having reached a natural limit, whereby they are no longer curable, nor can they be subject to clinical control.
6. In hyperthermia where the temperature is too high and of too long duration (malignant fever)
7. In hypothermia where the temperature is subnormal for too long
8. Where there is a progressive asthenia (weakening) of the entire metabolism (system)

9. The situation where a demon makes off with the personal energy of the patient, who is usually suffering from what would normally be some controllable or curable condition. Treatment in this instance is totally ineffective.”<sup>96</sup>

**-The Twenty Nine Questions of Interrogation<sup>97</sup>**

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<sup>96</sup> Drummer pg. 71

<sup>97</sup> Drummer pg. 81

**-Summary of Humoric Constituents And the Structure of the Tibetan Medical System<sup>98</sup>**

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<sup>98</sup> Finckh pg. 25; pg. 36

**-Forms of Tibetan Medication<sup>99</sup>**

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<sup>99</sup> Men-Tsee-Khang pg. 72

## **Appendix 5: Tibetan Medications**

### ***Dschu-Mar-25:***

*Ingredients:* This precious pill is made from twenty five different ingredients. These include coral, pearl, mercury, and Lapis lazuli which are cleansed of their toxins, saffron, nutmeg, Crocus sativus linn, Saxifraga pasumensis marg, and Terminalia chebula retz. All ingredients crushed into powder and mixed. Significant amounts of sugar should be added and mixed well. Store in a clean glass jar

*Uses:* This pill is beneficial for severe headaches, brain disorders, fainting spells, and seizures. The cool nature of the coral combats fevers caused by toxins, neuritis, and chronic ailments. This pill is effective for all nerve disorders.

*Dosage:* 500mg Once in the morning once in the evening

*Vehicle:* Very Hot Water

***Dhali 18:***

*Ingredients:* Rhododendron, amomom subalatum, Terminalia chebula, Santalum album, Terminalia belerica, Pterocarpus santalinus, Emblica officinalis, Symplocos crataegoides, Bambusa textiles, Rubia cordifolia, Carthamus tinctorius, vermilion, Myristica fragrans, gentiana tibetica, Eugenia caryophyllata, cinnamomum zeylanicum, elettaria cardamomum, aquilaria agollocha

*Uses:* vasodialation, nerve disease, paralysis of the limbs, parkinsons, facial spasm

*Dosage:* 2-3 grams three times a day

***Adach 8, 15, 17, 20, 35:***

*Uses:* All Adach medications treat depression, wind imbalances, problems with blood pressure, weakness, and poor circulation. Different numbers are specific for different regions of the body: 8-heart disease, mental disorders, breast cancer; 20-nerve disease, epilepsy; 35- whole body; 17- kidney; 15– lungs and asthma.

***Sam-Khyung:***

*Uses:* Beneficial for arthritis, stiffness, swelling, shaking, spasms, spondylitus, leprosy, kidney disease, organ infection, stroke, epilepsy, Brain nerve disease.

***Kundi***

*Preperation:* Powder to be impregnated and triturated with the urin of eight year old boy and tablets made out of it

*Uses:* leprosy, affliction by evil spirits, stiffness

*Dosage:* 50 mg in the evening

*Vehicle:* hot water slightly cooled.

***Samnor:***

*Uses:* Very similar to *Sam-Khyung*, specifically for fever/hot disease, broken bones (inflammation). Not good to mix with sweet food.

***La-Ming-25:***

*Uses:* For brain and neausea. Beneficial for paralysis, tremors, seizure, and drepression

*Shing-Na:*

*Mutik-25:*

*Potuk:*

*Pa-Chung:*

*Krag-Jaksung:*

*Lay-The*

## **Appendix 6: The First Eight Steps of Mercury Purification**

## **Appendix 7: Maps of Kathmandu**