

# 100 years before Weston Price: The Observations of George Catlin

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After 30 years of traveling as an artist/ethnographer, after observing over 150 tribes of Native Americans in both North and South America, George Catlin wrote a short book in 1860-- with his advice to mankind on health-- the subject of which has not yet been addressed by the Weston A Price Foundation.

What was his advice to mankind on health... for both physical and mental health?



"Stu-mick-o-súcks" (Buffalo Bull's Back Fat) 1832 3

"Buffalo Bull's Back Fat" was the head chief of the Blackfoot tribe-- a plains indian nation near the Canadian border. With the buffalo being the most important food source of the plains indians, and the back fat (tallow) the most highly prized portion of the buffalo bull-- to be given the name "Buffalo Bull's Back Fat"-- was a title of the greatest distinction.

George Catlin's message may be more timely than ever, and may well provide a missing link for those seeking optimum health who have been on the Weston A Price Foundation diet and protocol for some time-- but who might have met with less success than they had hoped...

This enigmatic life sized oil painting-- once shown by artist George Catlin before royalty and exhibited in the Louvre-- now hangs in the Smithsonian American Art Museum. Catlin painted well over 500 paintings -- in front of his Native American models-- after traveling great distances under adverse conditions to reach them: on horseback, on foot-- and even 2000 miles alone in a birch-bark canoe. 1

Catlin's work now forms a centerpiece in the Smithsonian Institution's collection, and can be viewed on their stunning websites: "George Catlin's Indian Gallery." And the Smithsonian's "Luce Foundation Center for American Art: The George Catlin Lightbox." 2

**100 years before Weston A Price, in 1830-- attorney turned portrait artist George Catlin-- inspired by a "delegate of 15... noble and dignified... Indians" visiting Philadelphia, headed west to document the rapidly disappearing Native Americans: "on a mission of becoming their historian..."** 4

In the years before photography was invented and came to be used as a documentary tool-- and during the time the US government had openly instituted a policy of eradicating the Native Americans, Catlin was the first American artist to travel west of the Mississippi, and paint portraits of the Native Americans from life in their native habitat. His over 500 hundred paintings-- from portraits to battle-scenes-- hundreds of artifacts, and volumes of notes of the native traditions amassed during his first 6 years of study became the start of his "Indian Gallery." 5

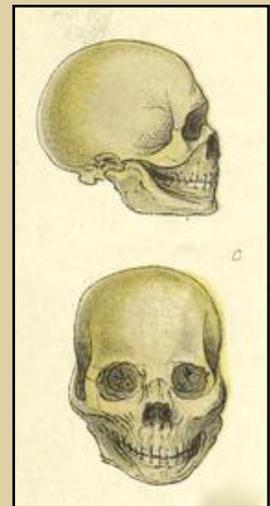
Catlin's lifelong quest was for the US Government to purchase his collection-- to create a Museum of the American Indian-- as a legacy for future generations. Welcomed by the Native Americans --before other white men had given them reason to be distrustful-- he lived with them as their guest and ate their food. Being a naturally gifted linguist, he was able to gain access to their sacred rituals, hunting, and games, as he created a huge body of work: a taxonomic classification of the Native Americans. His original scientific approach has been compared to the work of bird illustrator John James Audubon. Driven by his own passion, as a "friend to the Indians" before they were "lost forever" ---ultimately the entire 30 years of his travels in North and South America to document 150 tribes and "2 millions of souls" were entirely self financed. 6

**As a pioneering anthropologist, Catlin recorded his observations of the physical characteristics of the Native Americans-- which are remarkably similar to Dr Price's observations 100 years later in his classic book "Nutrition and Physical Degeneration."** 7 **Catlin wrote copiously about the health of the teeth of the Native Americans:**

*"...These people, who talk little and sleep naturally, have no dentists nor dentifrice, nor do they require either; their teeth almost invariably rise from the gums and arrange themselves as regular as the keys of a piano; and without decay or aches, preserve their soundness and enamel, and powers of mastication..."* 8

**Catlin made documentation of many objects of everyday life-- even of skulls-- as Dr Price was to make later. Catlin also connected the Indian's high level of physical perfection to consumption of their native foods-- and bemoaned advancing civilization:**

*"...A short time after I had described to the World the beautiful formation and polish of the teeth in these skulls...", ..." the most beautiful of them, which had chewed Buffalo meat for 25 years or a half Century, are now chewing Bread...."* For other remote tribes he documented: "Food of this tribe, fish venison, vegetables." And: "This Tribe I found living entirely in their primitive state; their food, Buffalo flesh and Maize, or Indian corn."



Note the wide dental arch in this pen and ink sketch by George Catlin... 9

**Catlin wrote of the superb health of children and lack of evidence of early death among children of natives living in their traditional ways:**

*"In searching through a graveyard for skulls of children: "... I was forcibly struck with the almost incredibly small proportion of crania of children; and even more so, in the 'almost unexceptional completeness and soundness (and total absence of malformation) of their beautiful sets of teeth, of all ages..." "The instances which I have stated, as rather extraordinary cases of the healthfulness of their children..."*

**He noted low infant mortality and the native foods which preserved health...**

*"Shar-re-tar-rushe, an aged and venerable Chief of the Pawnee-Picts, a powerful Tribe living on the headwaters of the Arkansas River, at the base of the Rocky Mountains, told me in answer to questions, "we very seldom lose a small child--none of our women have ever died in childbirth--they have no medical attendance on these occasions--we have no Idiots or Lunatics - -nor any Deaf and Dumb, or Hunch-backs, and our children never die in teething." "Their food, Buffalo flesh and venison."*

**As did Dr Price-- Catlin reviewed statistics on health in the civilized world:**

*"...in London and other large towns in England, and cities of the Continent, on an average, one half of the human Race die before they reach the age of 5 years, and one half of the remainder die before they reach the age of 25 years, thus leaving one in four to share the chances of lasting from the age of 25 to old age."*

He described statistics in England as being: "20,000 Idiots"... and "35,000 Lunatics," and wrote: "The contrast

*between the two societies, of Savage and of Civil, as regards to the perfection and duration of their teeth, is quite equal to their Bills or Mortality."*

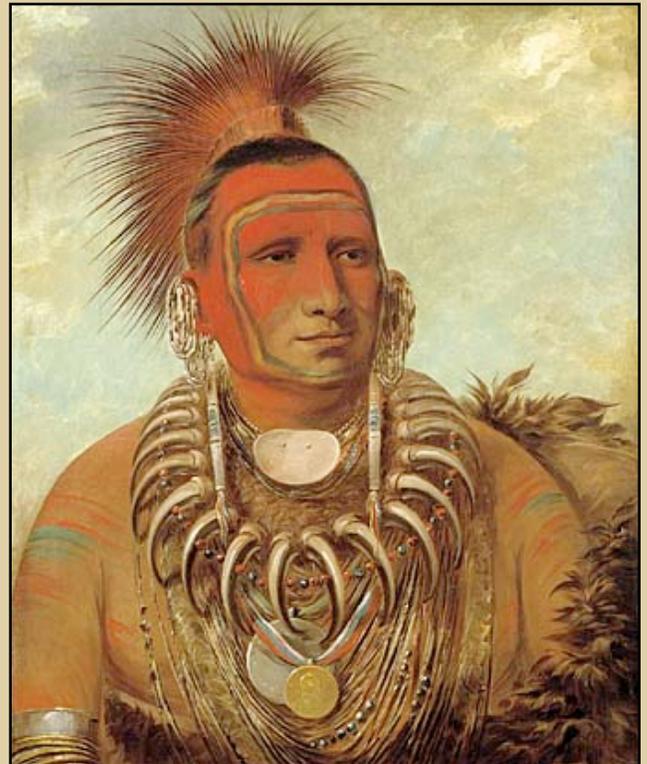
**Catlin spoke of the beauty, pageantry, and demeanor of the Native Americans:**

*"...The several tribes of Indians inhabiting the regions of the Upper Missouri.... are undoubtedly the finest looking, best equipped, and most beautifully costumed of any on the Continent." Writing of the Blackfoot and Crow-- tribes who lived on the rich glaciated soils of the plains (now the North Central American plains states) and hunted buffalo: "They are the happiest races of Indian I have met-- picturesque and handsome, almost beyond description..."*

**Along with Dr Price, Catlin developed a great admiration for the people he studied:**

*"The very use of the word savage, as it is applied in its general sense, I am inclined to believe is an abuse of the word, and the people to whom it is applied."*

**As did Weston Price, George Catlin compared the superb health and physical perfection of the Native American to modern man's:**



**"Shon-ta-yi-ga, Little Wolf, a Famous Warrior" 10**



*"...This enormous disproportion might be attributed to some natural physical deficiency in the construction of Man, were it not that we find him in some phases of Savage life, enjoying almost equal exemption from disease and premature death, as the Brute creations; (editor's note: animals) leading us to the irresistible conclusion that there is some lamentable fault yet overlooked in the sanitary economy of civilized life."*

*"...I offer myself as a living witness, that whilst in that condition ( editor's note: living in their primitive condition), the Native Races of North and South America are a healthier people, and less subject to premature mortality (save from accidents of War and the Chase, and also from Small-pox and other pestilential diseases introduced amongst them) than any Civilized Race in existence."*

**As did Weston A Price 100 years later-- George Catlin observed that moral and physical degeneration came together with the advent of civilized society, in his late 1830's portrait of "Pigeon's Egg Head (The Light) Going to and Returning from Washington" 11: Catlin painted him corrupted with**

*"gifts of the great white father" upon his return to his native homeland-- including 2 whiskey bottles in his pockets.*

**Frustrated with his inability to attract Governmental support for a National Museum, and running short on financing his quest to document all of the tribes, Catlin began using more showman like ways to create support.** He brought Native Americans back East to perform their traditional dances-- and changed his gallery presentation style away from his original dry scientific presentation: he is credited with creating the first Wild West Shows. He traveled Europe with 2 tons of artifacts, including 2 live bears, a full sized teepee, and a Native American troupe to perform traditional dances. At first wildly popular-- even displaying before royalty and in the Louvre, after 5 years in London and Paris, he was imprisoned when unable to pay his debts. Freed by a benefactor-- and by this time completely deaf-- Catlin then continued his ethnographic explorations--traveling to South America-- from Patagonia to Brazil-- all the way up the Amazon to its source, in three trips over a 5 year period. He continued on to the North American west coast and Aleutians, all with a single traveling companion. *"It is a story which far exceeds the fictional one of Robinson Crusoe and his man Friday,"* according to one biographer. <sup>12</sup>

**30 years of travel, through both North and South America searching for Native populations to document-- some of which had never seen a white man before-- afforded George Catlin a tremendous opportunity to continually contrast "Civilized Man with "Natural Man."** Like Dr Price-- Catlin asked the right questions: **"What were the Native Peoples doing to create their superior health?"**

**What was the message that George Catlin was compelled to communicate after visiting (in his words):** *"over 150 tribes, containing 2 millions of souls; and therefore have had, in all probability, more extensive opportunities than any other man living, of examining their sanitary system..."*

**Returning from his last voyage in 1860, Catlin wrote:** *"If I were to endeavor to bequeath to posterity the most important Motto which human language can convey, it should be in three words — Shut your mouth."*

**"Shut your Mouth (and save your life)"** is the name of the book he wrote as a gift to future generations in 1860. The full 40 page book is available to read online as a PDF file by an internet search of "Catlin PDF Shut Your Mouth." <sup>13</sup>

***"If I were to endeavor to bequeath to posterity the most important Motto which human language can convey, it should be in three words — Shut your mouth."***

### **Why was this so important?**

**And-- how did he come to the conclusion that it had a more profound effect on health than any of his other observations of the traditions of the Native Peoples over 30 years?**

**One key to answering this question lies in his observation of a tradition of nursing mothers in all Native American cultures he visited in both North and South America: the swaddling <sup>14</sup> of their infants.**

In "Shut Your Mouth" he wrote: *"...All Savage infants amongst the various Native Tribes of America, are reared in cribs (or cradles) with the back lashed to a straight board; and by the aid of a circular, concave cushion placed under the head, the head is bowed a little forward when they sleep, which prevents the mouth from falling open; thus establishing the early habit of breathing through the nostrils."*

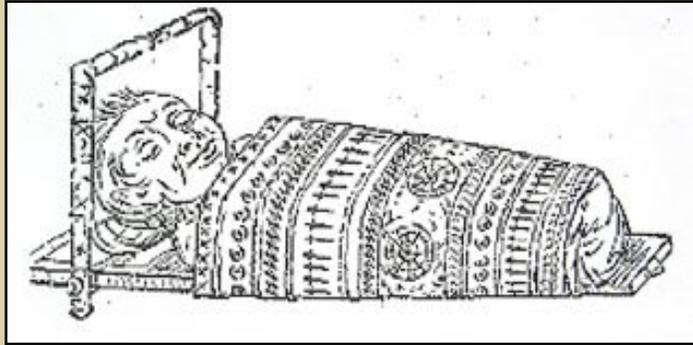
**Like Dr Price-- George Catlin asked "why was this tradition practiced?"**, and he heard a similar reply that Dr Price did: *"...I was soon made to understand, both by their women and their Medicine Men, that it was done to insure their good looks, and prolong their lives;..."*



**Chée-ah-ká-tchéé, wife of Nót-to-way, <sup>15</sup>**

With his characteristic methodical method of inquiry, Catlin continues with his observation of this Wise Tradition:

*"The Savage Mother, instead of embracing her infant in her sleeping hours, in the heated exhalation of her body, places it at arm's length from her, (Editor's note: in the cradleboard) and compels it to breathe the fresh air, the coldness of which generally prompts it to shut the mouth..."* *"The results of this habit are, that Indian adults invariably walk erect and straight, have healthy spines, and sleep upon their backs, with Robes wrapped around them, with the head supported by some rest, which inclines it forward..."* *".. and their sleep is therefore always unattended with the nightmare or snoring."*



16

***"...thus establishing the early habit of breathing through the nostrils."***

***"Unattended with the nightmare or snoring:"*** With each page in *Shut Your Mouth... and Save Your Life*, it becomes apparent that George Catlin not only has a remarkable understanding of nasal physiology-- but of the condition of sleep apnea as well:

*"Unnatural sleep, which is irritating to the lungs and nervous system, fails to afford that rest which sleep is intended to give.."* *"They should first recollect that their natural food is fresh air..."*

Catlin contrasted the universal Native American wisdom of creating a life-long nasal breathing habit for both day and night-- in his illustration below of the sleeping habits of "Civilized Man": "...who "their mouths wide open-- the very pictures of distress-- of suffering, of Idiocy, of Death..."

*"There is no animal in nature, excepting man, that sleeps with it's mouth open..."*

In the flowery style of the day in "Shut Your Mouth.." he adds.. *"If man's unconscious existence for nearly one-third of the hours of his breathing life depends, from one moment to another, upon the air that passes through his nostrils; and his repose during those hours, and his bodily health and enjoyment between them, depend upon the soothed and tempered character of the currents that are passed through his nose to his lungs, how mysteriously intricate in its construction and important in its functions is that feature, and how disastrous may be the omission in education which sanctions a departure from the full and natural use of this wise arrangement!"*



150 years ago, George Catlin asked critical questions regarding the hierarchy of physiological functions required for health-- such as: how long can your body last without oxygen?:

*"Man can exist several days without food, but about as many minutes without the action of his lungs."*

***"...Rest assured that the great secret to life is the breathing principal..."***

As did Dr Price-- George Catlin also ob-

***"...Rest assured~ that the great secret to life is the breathing principal..."***

served and marveled at native people who were the perfect expression of their genetic blueprint. It can be assumed, then, by the remarks by both men-- that if the native people they spoke of had perfectly formed dental arches-- that it would follow that all 32 teeth would be the norm in both cases. **And with that-- also would come the perfect expression of the full airway capacity potential: a cranium large enough to accommodate continually growing soft tissues as a person ages.** <sup>17</sup>

Readers of Wise Traditions will likely remember a wonderful article written by Dr Raymond Silkman a few years ago: "Is it Mental or is it Dental?" <sup>18</sup> In this article, Dr Silkman states:

***"Airway capacity is the biggest and most important part of the well-being of a human being."***

*"It is important to stress the fact that breathing through the mouth and breathing through the nose have extremely disparate effects on the body. We are not designed to breathe through our mouths. The body is able to live by breathing through the mouth, but it suffers greatly for doing it."*

Dr Silkman compares an underdeveloped cranium to an "over-packed suitcase", and discusses the resultant problems possible which can effect the ENTIRE body as cerebral spinal fluid is not able to flow as it was designed.

**To paraphrase his article:**

Lack of oxygenation or nourishment to cranial tissues and organs, improper drainage of waste products through the lymphatic system, in turn cause nerve conduction issues, hormonal imbalances, and negative effects on brain function and mental clarity. A forward head posture can develop as a result, which in turn causes spinal misalignments, as well as fatigue and fibromyalgia. The maxilla also becomes underdeveloped, effecting the eyesight, facial aesthetics, creating narrow nasal passages, which do not drain or function properly-- or properly produce Nitric Oxide-- which is a critical element for health. Because of underdevelopment of the maxilla-- there is airway obstruction, often a deviated septum, and mouth breathing-- setting the stage for sleep apnea, TMJ issues and migraine headaches. With mouth breathing and no Nitric Oxide delivered in heated humidified air--the lungs cannot oxygenate properly, thereby effecting the heart, and setting the stage for cancer. Cancer thrives in an anaerobic environment.

**Therefore-- having an underdeveloped cranium negatively effects every cell in the body.**

Many people may pass over these important clues in Dr Silkman's article-- justifying that they do not breathe through their mouths. But-- as George Catlin pointed out: *"Few people can be convinced that they snore in their sleep, for the snoring is stopped when they wake, and so with breathing through the mouth, which is generally the cause of snoring..."* So-- the obvious day time mouth breathers are easy to spot--- however-- the unconscious night time mouth-breathing habit can be present without detection even with a spouse along side at night-- and undermining the health to various degrees in relation to the severity of mouth breathing.

Additional facts can be obtained by visiting SleepHotline.com: **"The Danger of Mouth Breathing":** <sup>19</sup>

"The tongue no longer provides support for the upper jaw with resulting reduced upper arch size. The vault rises leading to reduction in the size of the nasal passages contributing to congestion of the nose. The pH of saliva elevates leading to increased rate of caries. A tendency to Upper Respiratory Tract infections often resulting in tonsillitis and enlarged adenoids. The medullary trigger resets at lower level leading to hyperventilation. The alkalinity of blood increases so less oxygen released from the blood. (This is known as the Bohr Effect.) Oxygen circulates the blood in the form of oxy-haemoglobin but reduced levels of carboxy-haemoglobin means that less oxygen is released from the oxy-haemoglobin to enter the tissues, so cells die. "Smooth muscle spasm. Gastric reflux, asthma and bed wetting are commonly associated with chronic mouth-breathing."

**Therefore -- it is possible (as in my own case) to be making all of the possible efforts for years to follow the Weston A Price Foundation principals to prepare food properly and live a non-toxic life-- however-- be completely unaware of what might possibly happen at night to undo all the best efforts during the waking hours.**

**As Catlin observes: "... he renews his disease every night..."**

**At night-- oxygenation de-saturation can occur-- due to mouth breathing and/or**

***...he renews his disease every night."***

**obstructive sleep apnea in susceptible individuals.** (ie, mild mouth breathing might produce minor snoring-- while an extreme example of mouth breathing would be obstructive sleep apnea where the tongue slides down into the throat-- causing a dangerous drop in oxygen levels as the airway is obstructed-- until the airway is forced open by a desperate gasp for air.)

Conversely-- perhaps this also might explain the person who seemingly is healthy while living a sedentary life on plenty of junk foods, smoking, and drinking alcohol: they were lucky enough to get a good start in life-- in the womb, by being breast fed properly, and through the growing years-- which has blessed them with a more optimum airway capacity that has been able to hold them together when nutrition is not there. Many older folks fit into this category-- as before 1940 all food was grown organically; parents at that time still commonly practiced healthy traditions such as breast-feeding longer term, and administering daily cod liver oil.

You can follow the Weston A Price Foundation lifestyle to the letter, but if you can't oxygenate at night properly (and during the day) you will never achieve robust health. How long does the body last without oxygen?

Which ever generational end you look at it from-- the principals of proper nutrition as taught by Dr. Price MUST be present somewhere for success! It is the sustainable, holistic "7th generational" pattern that must be studied for clues on how to live-- as Dr. Francis Pottenger's work attests. As such, it is critically important that the Weston A Price Foundation's educational message be spread and put into practice to insure proper cranial/skeletal formation to achieve the genetic potential of 32 teeth -- to thereby insure the critical proper airway capacity for healthy children now-- and for them to oxygenate to their full potential in order to create the healthiest of future generations.

**The "over-packed suitcase" types-- mother AND father-- must pay MORE attention to health to insure healthy offspring. Catlin also understood this concept that Dr. Pottenger made his life's work:**

*"Nature produces no diseases, nor deformities; but the offspring of men and women whose systems are impaired by the habits which have been alluded to, are no doubt oftentimes ushered into the world with constitutional weaknesses and predilections for contracting the same habits..."*

**Not only this-- after proper nutrition upon the part of the parents create a healthy infant with proper airway capacity-- equally as important during infancy, the breast feeding months, and beyond, are applying the fundamentals of how to continue to grow and maintain the most optimum airway capacity-- by proper positioning of the tongue. The tongue is designed to rest up high against the roof of the mouth.**

**Dr Silkman writes:** *"People who breathe through their nose also normally have a tongue that postures up into the maxilla. When the tongue sits right up behind the front teeth, it is maintaining the shape of the maxilla every time you swallow. Every time the proper tongue swallow motion takes place it spreads up against maxilla, activating it and contributing to that little cranial motion..."*

**The importance of breast-feeding for proper formation of the maxilla, throat, tongue position, and swallowing mechanism are emphasized by both orthodontist Raymond Silkman,-- as well as by orthodontist Steven Sue from Honolulu, Hawaii <sup>20</sup>. Both warn of the problems which occur with bottle feeding, pacifiers, and thumb sucking... even if perfect nutrition is there!**

Dr Silkman continues: *"Almost invariably a narrow or under-developed maxilla can cause the effect of holding back the lower jaw or the mandible. This improper positioning of the mandible and its inherent retrusion causes a lack of physical and physiological space for the tongue and the pharyngeal tissues, which again will provide an impedance to the airways, causing breathing difficulties and lowered oxygen uptake by all of the tissues."*

**What Dr Steven Sue of Honolulu-- has brought out in his brilliant website: [NoseBreathe.com](http://NoseBreathe.com) <sup>21</sup>-- is that when the mouth is closed and one breathes through the nose-- a vacuum is formed which keeps the tongue up in the roof of the mouth-- preventing it from sliding back into the throat to obstruct the airway.**

**He has invented a dental sleep apnea appliance designed with a tongue shelf for the tongue to rest on which positions it up against the maxilla (the roof of the mouth just behind the front teeth). The key by which the tongue is held in the optimal upper position-- is the "lip seal" on his custom made dental orthotic device**

which prevents the “vacuum” from being broken. A closed mouth and normal nasal breathing creates this vacuum. An open mouth-- as a result of structural imperfections, habit or blocked nasal passages-- has no vacuum to hold the tongue forward, and therefore is free to fall back into the airway to cause an obstruction. From Dr Steven Sue's website: *"The lip seal is fundamental, almost invisible, and occurs naturally. It is found only in nose breathing! Zen masters since ancient times have known the secret. When the tongue is placed at the roof of the mouth, it prevents the tongue from falling into the back of the throat. The tongue is held forward and away from the back of the throat by the naturally occurring lip seal and a forward "tongue suction." Pacifiers and "Sippy" Cups keep the tongue low and away from the roof of the mouth. They encourage mouth breathing and tongue thrust; the same effects as thumb sucking and therefore, harmful to the developing child."*

This explanation by Dr Silkman and Dr Sue give a better understanding of the Native American wisdom tradition Catlin observed of training the infant from birth to keep it's mouth closed during sleep by means of a pillow behind its head-- as well as restricting the infant's hands (which insures no thumb-sucking occurs.) The beauty of the design of swaddling the infant against the cradleboard makes perfect sense; from the portability of the cradleboard, and ease in which nursing can occur; to the security the infant feels by recreating the tight quarters of the womb-- thereby reducing crying (which causes colic and eliminates Nitric Oxide 22); to the ability to expose the infant to colder air on its face-- which in turn prompts the infant to keep its mouth shut.

**Mouth breathing at night impacts two of the foundational pillars of health: Oxygenation, and rejuvenating sleep. Catlin described the purpose of sleep:** *"... quiet and natural sleep; the great restorer of mankind.."*

Unfortunately for most of civilized society-- from Catlin's day, to Dr Prices' day to our 21st century--- nocturnal mouth breathing has become a normal occurrence. In the US: statistics show that 30 to 60% of adults snore, depending on age. 23 The statistics on sleep apnea in the US show 18 to 20 million Americans-- approximately 1 in 15 people-- have diagnosed sleep apnea. 24 Undiagnosed sleep apnea is another 17 million people. 25 Recent studies have shown that Sleep Disordered Breathing is associated with Type II diabetes 26-- and we have an epidemic of diabetes in this country. Up to 50 percent of people living with diabetes have sleep apnea! 27 One in 3 children are overweight or obese now.28-- and obesity being the most obvious factor associated with sleep apnea-- then we are facing an epidemic-- a vicious circle which may be very hard to get out of. Still more studies link diabetes, obesity and GERD.29 Dr Sue lists 7 references on his site linking GERD to mouth breathing and dysfunctional swallowing on his website. 30 The list continues: bruxism and TMD are associated with SDB and cranio-facial abnormalities. 31

**Lowered IQ:** Readers of Dr Price's classic "Nutrition and Physical Degeneration" and those that have viewed WAPF president Sally Fallon Morell's conference presentations will remember well the Down's Syndrome youth that Dr Price worked with to widen his palate. 32 He wrote that this youth's palate was so small and his tongue so large in relation to it that he risked "strangling in bed" unless his head was elevated and he slept on his side. Dr Price noted that he was a mouth breather, and after his work to widen the youth's palate, Dr Price recorded the airway capacity improved. Apparently, this youth had sleep apnea! 45% of Down's Syndrome children have OSA. 33 A 2006 study shows a link to lowered IQ in normal children as well: *"Childhood Obstructive Sleep Apnea is Linked with Altered Brain Metabolites and Lowered IQ".* 34 Still another study: *"Habitual Snoring, Intermittent Hypoxia, and Impaired Behavior in Primary School Children:"* concludes: *"Sleep-disordered breathing (SDB) is suggested to affect day-*



*"Nez Perce Babe" Edward Curtis 1911 35 Swaddling infants by simply wrapping them snugly in a covering has become more widespread now with studies showing it's effectiveness. 36 However-- these new studies have often been contrasted to traditional cradleboard use. Nursing expert Margaret Andrews explains a modern day remedy: "Although cradleboards have been blamed for exacerbating hip dysplasia in Native Infants, diapering counterbalances this by causing a slight abduction of the hips." 37*

**Ultimately-- creating optimal airway capacity is a nutritional issue.**

*time behavior and neurocognitive performance in children..." "...revealing a dose-effect gradient between snoring frequency and impaired behavior!" 38*

Furthermore, people who suffer from sleep apnea are up to 4 times more likely to have a stroke and 3 times more likely to have a heart attack. 39

Drowsy driving leads to at least 100,000 car crashes and 1,550 deaths each year, according to the National Highway Safety Administration. 40

Statistics today also tell us that only 4 out of 100 people in the US now have enough room in their craniums for their wisdom teeth. 41 An underdeveloped cranium results in reduced airway capacity, which in turn-- along with obesity-- helps to set the stage for sleep disorders.

**Ultimately-- creating optimal airway capacity is a nutritional issue.**

Therefore, extra effort to provide proper nutrition with sacred foods BEFORE pregnancy for BOTH parents-- one of the 11 principals Dr Price observed is critical advice to pass on. And, "Prepared Parenting", as the Weston A Price Foundation focuses on helps to set the stage for not only physically and mentally healthy children-- but an experience of parenting that is more rewarding as well.

The other 1/3 of our lives we have not addressed must be researched thoroughly, with an emphasis on studying the model of perfection of health rather than the model of disease.

Where are the robust healthy people who still live in their native ways-- who have perfectly formed dental arches and 32 teeth? We must learn from their ways now while we still have the chance...

**The model of perfection-**

**"Mother Nature obeyed":**

Yet another thought on the "Wise Tradition" of swaddling infants by Native American women-- (and with the advantage of historical photography to show details)-- careful observation shows that infants might not have easily and quickly been released from the swaddling materials-- particularly in the cold and extreme conditions they lived in. This is more evidence of the philosophy of conservation at work in elegant fashion...

**What did the millions of Native American mothers in North and South America over 150 years ago know-- that we have yet to understand?**

**Perhaps through consistent nasal breathing day -- and night--** they maintained a perfect homeostasis by conserving fluids in-- so that less fluid was excreted by both Mother and infant. Nose breathing lets less moisture escape from the body than does mouth breathing-- reducing the need to replenish moisture for both Mother and infant.

Breast milk must have been the perfect mineral balance-- and FULL rich cream! Infants must have ingested less-- and used it more effectively with less waste-- than modern day mothers on "Diet Cokes", and nutrient-poor prepared foods with MSG, and other additives--- going thru one "Pampers" after another.



"Aissiniboine Mother and Child", Edward Curtis, 1928  
42 Modern day authorities advise for legs to move freely in modern swaddling wraps-- but hundreds of photos 43 testify to traditional methods used in the dozens of different types of cradleboards did not always allow for legs to move freely. 44 We only have modern sources to estimate daily hours spent in cradleboards-- and number of months it was used. 45

## Pregnancy as Mother Nature Intended: “Conscious Pregnancy”

Cell Biologist-- Bruce Lipton, Ph.D., in his wonderful book “The Biology of Belief”<sup>46</sup> has an exceptional chapter: “Parents as Genetic Engineers.” Dr Lipton's main point is that subconscious behavior is “downloaded” by the growing child observing parent's behavior in the first 6 years of life-- which ultimately drives 96% of life-long behavior. But, he also explains that parents can consciously “act as genetic engineers” by “improving the prenatal environment.” Dr Lipton cautions that the environment created within the womb must be considered of utmost importance: “...the developing child receives far more than nutrients from the mother's blood.”...”When passing through the placenta, the hormones of a mother experiencing chronic stress will profoundly alter the distribution of blood flow in her fetus and change the character of her developing child's physiology” Additionally, he states: “Excess cortisol absorbed from a stressed mother modifies fetal nephron formation. An additional effect of excess cortisol is that it simultaneously switched the mother's and the fetus' system from a growth state to a protection posture. The growth inhibiting effect of excess cortisol in the womb causes the babies to be born smaller.”<sup>47</sup>



Excerpted from Catlin's illustration “La-doo-ke-a, The Buffalo Bull, and Other Pawnees”<sup>52</sup>

**It follows then-- that if a mother has an unhealthy or stressful pregnancy-- the fetus will perceive both a physical AND a subconscious lack on some level.** It could potentially set the stage for a sensation of lack that would be something to be overcome during the life of the growing child. Sally Fallon, president of the Weston A Price Foundation in her lectures, speaks of children having the sensation that they are “being cheated somehow” out of their birthright of a healthy body.<sup>48</sup>

**As Dr Lipton's work explains -- this can very well be true. And, as Dr Silkman explains-- also true for the infant who has not received the proper nutritional chemistry to form an optimum airway before birth-- and then after birth must also fight to nurse properly:** “The consequences of mouth breathing can occur from the moment of birth because all infants are obligate nose breathers. That is the mechanism by which breast feeding and breathing can occur simultaneously. If a baby has obstructed airways, he may turn away from the breast due to lack of air and prefer a bottle, which allows him to consume his food more quickly.”<sup>49</sup>

**As such-- extra precautions must be made for infants who are unable to nurse properly-- especially considering that dental palate birth defects are the most common kind of birth defects.**<sup>50</sup> They need more than ever the nourishment of Mother's own milk, her hormonally balanced, nutritionally superior formula-- delivered by

breast to insure proper airway formation. Mothers need to make more effort than ever to not to give up with trying to nurse the colic prone baby that prefers a bottle...

**Surmising from Catlin's observations of the prevalence of cradle-boards--** and his artwork such as the illustration above-- it can be assumed that rearing infants in them would be less stressful for both infant, mother, and any other family members. The large numbers of historical photographs of Native Americans with contented and captivating infants in cradleboards also attests to this.<sup>51</sup>

Traditions that are this prevalent and span the millenniums to be sustainable-- are wise. However, it is up to us to discover the Science behind them-- before the practice among the few Native Americans who still use cradleboards dies out-- and adapt the successful components to modern day use. What are the underlying reasons for its success?

**In a manner similar to Dr Price, Catlin wrote of the contrast of the “Natural Man” who followed the ways of Nature-- and those who worked against Nature...**

*“.. The American Savage often smiles, but seldom laughs; and he meets most of the emotions of life, however sudden and exciting they may be, with his lips and his teeth closed. He is, nevertheless, garrulous and fond of anecdote...*

*“Civilized people, who, from their educations, are more excitable, regard most exciting, amusing, or alarming scenes with the mouth open; as in wonder, astonishment, pain, pleasure, listening, etc...”*

*“The Savage, without the change of a muscle in his face, listens to the rumbling of the Earthquake, or the thunder's crash, with his hand over his mouth; and if by the extreme of other excitement he is forced to laugh or to cry, his mouth is invariably hidden in the same manner.”*

**For the Native Americans, the idea of conservation of breath at night and during the day was more than practical wisdom--- it was a philosophy of life:**

Catlin writes: *“The proverb, as old and unchangeable as their hills, amongst the North American Indians; “ My son, if you would be wise, open first your Eyes, your Ears next, and last of all, your Mouth, that your words may be words of wisdom, and give no advantage to thine adversary...”*

**Another quote-- from Ohiyesa /Dr Charles A. Eastman, a Santee Dakota, in his book “The Soul of an Indian, an Interpretation”, in 1902: 53**

*“The man who preserves his selfhood ever calm and unshaken by the storms of existence-- not a leaf, as it were, astir on the tree, not a ripple upon the surface of the shining pool--his, in the mind of the unlettered sage, is the ideal attitude and conduct of life.” “Silence is the cornerstone of character.” “Guard your tongue in youth,” said the old chief, Wabashaw, and “and in age you may mature a thought that will be of service to your people.”*

Dr Price was also greatly impressed by the philosophy of the Native American, and his book “Nutrition and Physical Degeneration,” he quotes the following phrase not once-- but three times: *“The culture of the Red Man is fundamentally spiritual, his measure of success is: “How much service have I rendered my people?” (from “The Gospel of the Red Man, by Ernest Thompson Seton) 54*

**Where the Indian "Yogis" of India practice "Pranayama" (control of the breath) during conscious waking hours, our own American Indian "Yogis"--appear to have used control of the breath while in the unconscious state while sleeping--by rote habit fixed during infancy-- to have achieved a fortunate conservation of life force to enhance their lives.**

***“....The lungs should be put to rest as a fond mother lulls her infant to sleep...”***

**George Catlin could have been writing about esoteric yogic breathing practices here-- with his quote in “Shut Your Mouth..”:** *“....The lungs should be put to rest as a fond mother lulls her infant to sleep...”*

**In explaining his thoughts on breathing-- Catlin quotes Genesis:**

*“We are told that the breath of life was breathed into man's nostrils'-- then why should we not continue to live by breathing in the same manner?”*

**With an internet search on “breathing” leading to the Wikipedia site, author Fiona Macdonald writes:**

*“The book of Genesis states that God formed man from the dust of the earth ‘and breathed into his nostrils the breath of life’. ...Breath, the air inhaled or exhaled from the body during respiration, is inextricably associated with existence: the first breath marks the beginning of independent life. It is therefore the most commonly held metaphor for life or spirit. Ancients commonly linked the breath to a life force. The Hebrew Bible refers to God breathing the breath of life into clay to make Adam a living soul (nephesh, roughly "breather"). “For the Greek philosopher Anaximenes (fl. c.550 bc) the breath or pneuma was the primeval life force that bound the universe together; inhaling it invigorated the body. Similarly, in Indian yogic philosophy, prana is the cosmic energy that fills and maintains the body, manifesting in living beings as the breath. The fourth step of Patanjali's system of Raja Yoga is pranayama, or breath control, practiced because the breath is held to influence markedly a person's thoughts and emotions. In one sense modern medicine concurs in this association, by directly relating hyperventilation to a disturbed psychological state.” 55*

**Nitric Oxide and "The mysterious refining process":** Catlin writes much on the nasal passages and on nostril breathing-- which show he had an appreciation of the function of respiration during closed mouth breathing that only now we are able to validate by our recent discovery of Nitric Oxide: 56

*"The mouth of man.. was made for the reception and mastication of food for the stomach, and other purposes, but the nostrils, with their delicate and fibrous linings for purifying and warming the air in its passage, have been mysteriously constructed, and designed to stand guard over the lungs..."*

*"we are again more astonished when we see the mysterious sensitiveness of that organ instinctively and instantaneously separating the gases, as well as arresting and rejecting the material impurities of the atmosphere." "... The atmosphere is nowhere near pure enough for man's breathing until it has passed this mysterious refining process..."*

**Now the "mysterious refining process" in which Nitric Oxide plays a part has become understood by science-- and Catlin's assumptions are verified. Just in 1998, the three scientists who first described Nitric Oxide won a Nobel Prize 57. Dr. Silkman writes:** *"Breathing through the nose creates an avenue of air that's moisturized, humidified and even somewhat filtered. Furthermore, when we breathe through our nose, the air passing through the nasal airway and contacting the turbinates--shelf- like bony structures--is slowed down. This allows the proper mixing of the air with an amazing gas produced in the nasal sinuses called nitric oxide (NO). Nitric oxide is secreted into the nasal passages and is inhaled through the nose. It is a potent vaso-dilator, and in the lungs it enhances the uptake of oxygen. NO is also produced in the walls of blood vessels and is critical to all organs."*

**Catlin contrasts "Natural Man" with "Civilized Man", and argues for breast feeding:**

*"I, who have seen some thousands of Indian women giving the breast to their infants, never saw an Indian mother withdrawing the nipple from the mouth of a young infant, without carefully closing its lips with her fingers;...."*

*"It requires no more than common sense to perceive that Mankind, like all of the Brute creations, should close their mouths when they close their eyes in sleep, and breathe through their nostrils...."*

*"But in civilized societies, how often do we see the tender mother (if she gives the breast at all) lull it to sleep at the breast, and steal the nipple from the open mouth, which she ventures not to close, for fear of waking it and if con-signed to the nurse, the same thing is done with the bottle."*

**Catlin expands upon this-- with what appears to be an excellent understanding one of the factors in S.I.D.S. (Sudden Infant Death Syndrome) that plagues modern man: Catlin explained that Native American mothers kept their infant's faces exposed to cooler, fresh and circulating air:**

*"The Savage infant... breathing the natural and wholesome air, generally from instinct, closes its mouth during sleep; and in all cases of exception the mother... enforces Nature' Law... until the habit is fixed for life..." "When I have seen a poor Indian woman in the wilderness, lowering her infant from the breast, and pressing its lips together as it falls asleep fix its cradle in the open air; and afterwards looked into the Indian multitude for the results of such a practice, I have said to myself, 'glorious education! such a Mother deserves to be the nurse of Emperors."*

*"But when we turn to civilized life, with all of its comforts, its luxuries, its science, and its medical Skill, our pity is enlisted for the tender germs of humanity, brought forth and caressed in smothered atmospheres which they can only breathe with their mouths wide open..."*

*"They should first be made acquainted with the fact that their infants don't require heated air, and that they had better sleep with their heads out of the window than under their mother's arms..."*



**Recently-- in the Archives of Pediatrics and Adolescent Medicine October 2008 issue, SIDS researchers reported that infants are less likely to succumb to SIDS with a fan on in the infant's room: 58**

New studies also show swaddling with the infant placed on the back reduces SIDS. 59 More wisdom comes to light now, of the self contained aspect of the cradleboard which protects the infant-- as opposed to having the infant sleep with the mother and father, where it might be crushed in sleep by them or suffocated with loose bedding as it rolls over.

**George Catlin's comments on "The Nightmare" describe sleep apnea- and the associated "Night Terrors":**

*"...no person on earth who has waked from a fit of the nightmare will dispute the fact that when consciousness came, he found his mouth and throat wide open, and parched with dryness..." "Every attack of the nightmare, I proclaim, is the beginning of death!" .."Though the spasm lasted but a minute... death would have been the consequence..." "...how awful to be so near death, and so often!"*

**He even foresaw the need for "attended sleep testing"!: "take a candle and go to the room of your friend..."**

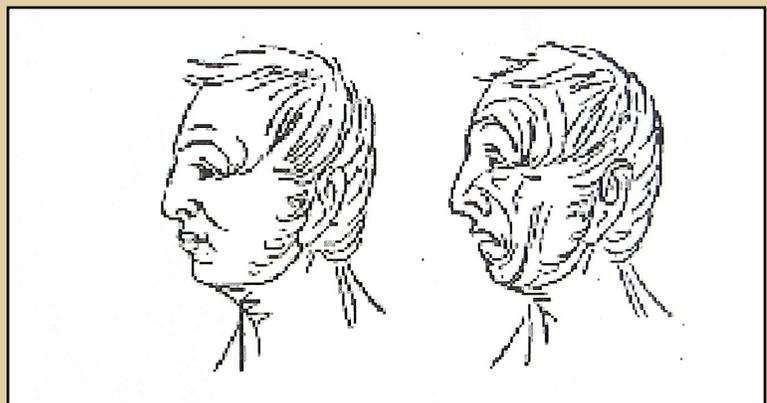
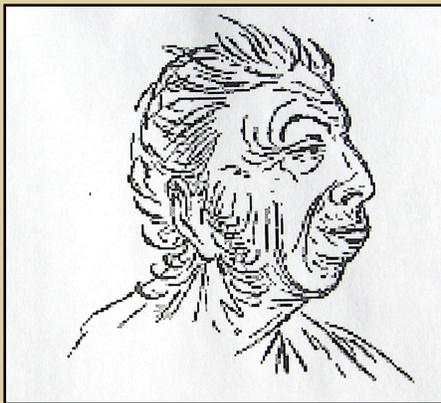
**Catlin describes his understanding of the origin of the perfect bite: the closed mouth:**

*"An Indian child is not allowed to sleep with it's mouth open, from the very first sleep of its existence; the consequence of which is, that while the teeth are forming and making their first appearance, they meet (and constantly feel) each other; and taking their relative, natural, positions, form that beautiful and pleasing regularity which has secured to the American Indians, as a race, perhaps the most manly and beautiful mouths in the world."*

**Facial Development: Observations of Catlin's critical portrait artist's eye:**

**Where Dr Price spent much of his book illustrating with photographs his examples of "facial deformity" and drawing conclusions as to why these occurred: "Dental deformities arise with altered facial structure" 60 --artist George Catlin illustrated with pen and ink and did the same...**

Catlin scrutinized "150 tribes containing two millions of souls" for pleasing form for his artist's brush-- and his illustrations below of poor facial form (vs correct form in the center) not only fits Dr Price's criteria-- but Dr Raymond Silkman's as well. Dr Price recorded elongated faces and narrow nasal passages as being poor facial form. And, Dr Raymond Silkman's examples of poor cranial positioning shown in his article are present on Catlin's drawing as well: note the forward head posture, and the retruded mandible on the left illustration.



**Catlin also describes what happens during nocturnal opened**

**mouth breathing to the facial features:** *"The whole features of the face are changed, the under jaw, unhinged, fails and retires, the cheeks are hollowed, and the cheekbones and the upper jaw advance, and the brow and upper eyelids are unnaturally lifted; presenting at once the leading features and expression of idiocy."* *"In all of these instances there is a derangement and deformity of the teeth, and disfigurement of the mouth and the whole face..."*

**According to Dr Louisa L. Williams, author of "Radical Medicine" 61, A cranial/facial form such as Catlin's illustrations below would indicate that these people would likely have been snorers-- or possibly have had sleep apnea as well: "Elongated face is associated with a narrow nasal cavity and an obstructed airway." 62**

**Dr Silkman maintains that forward head posture is the body's adaption to increase airway capacity when the body is dealing with a narrow nasal cavity. 63 Both Dr Silkman and Dr Sue agree mouth breathing and forward head**

posture each lead to sympathetic overload, activating the hormonal adrenal stress response. <sup>64</sup> WAPF's own Dr Tom Cowan comments on adrenals and their connection with allergies, (which is common in many mouth breathers): "Specifically, the best theory on the etiology of allergies is that they are related to an imbalance in the functioning of our adrenal gland." <sup>65</sup> So-- it might be said that: another way to *"be kind to your adrenals"*\* is to not allow mouth breathing or forward head posture to develop! With adrenal exhaustion being associated with hypothyroidism, and sleep disorders being also associated with hypothyroidism, <sup>66</sup>-- the question is: could having reduced airway capacity from infancy be one of the underlying causes of stress induced physical decline?

**Both Dr Price and George Catlin questioned why tuberculosis claimed so many lives in modern man.** In Catlin's day-- it was called "Consumption." Catlin lost his wife and 1 of his 4 children to a respiratory illness-- pneumonia-- and in his book he ponders the cause of respiratory illness, linking it to mouth breathing: *"I am compelled to believe...that a great proportion of the diseases prematurely fatal to human life, as well as mental and physical deformities, and the destruction of the teeth, are caused by the abuse of the lungs, in the Mal-respiration of sleep."*

**Readers of Dr Price's works will recall that Dr Price devoted much time to the subject of dental foci. <sup>67</sup> Catlin also presaged the concept that Dental Foci infections would travel and create illness:**

*"Infected districts communicate disease, infection attracts to it putrescence, and no other infected district can be so near the lungs as an infected mouth."*

**"Life in all of it's fullness is Mother Nature Obeyed"-- is of course Dr Price's famous axiom-- and George Catlin formed his own parallel quotes:**

*"Most habits against Nature, if not arrested, run into disease." "Air is an Elementary principal, created by the hand of God, who... creates nothing but perfections..." "...sleep, which is the great renovator and regulator of health, and in fact the food of life, should be enjoyed in the manner which Nature has designed..."*

**Near the end of their books-- both great men discuss the issue of Heredity vs Environment:**

Catlin: *"No diseases are natural..."*, and *"deformities, mental and physical, are neither hereditary nor natural, but purely the result of accidents or habits."*

Dr Price: *"Neither heredity nor environment alone cause our juvenile delinquents and mental defectives. They are cripples, physically, mentally and morally, which could have and should have been prevented by adequate education and by adequate parental nutrition. Their protoplasm was not normally organized."*

**Like Dr Price, George Catlin had the advantage of the ability to study human health-- in a state of perfection-- to provide a precious window into the past of the "Wise Traditions" of Native people.**

**Like Dr Price's work-- George Catlin's work can never again be duplicated.**

**His ethnographic work to establish a Museum of the American Indian was never realized in his own lifetime-- but Catlin's humanitarian drive compelled him to devote the last 12 years of his life until his death in 1872-- to seeing that "Shut Your Mouth... and Save Your Life" was continually revised and republished.**

**Catlin's observations of "150 tribes" --from the Aleutians near Alaska to Patagonia at the tip of South America-- "containing 2 millions of souls" over 30 years and his single conclusion of: "... Rest assured, that the great secret to life is the breathing principal..." as the most important factor in human health, contained within his forgotten 40 page book "Shut Your Mouth-- and Save Your Life" deserve to be placed beside Dr Price's "Nutrition and Physical Degeneration", and "Pottenger's Cats- a Study in Nutrition" as equally important work to be studied and put into practice for the benefit the whole of mankind.**

**"...they should first recollect, that their natural food is fresh air..."**

**Even the final words in Catlin's book-- echo the humanitarian sentiment in Dr Price's last words-- "You teach, you teach, you teach!":** *"I have lived long enough, and observed enough, to become fully convinced of the unnecessary and premature mortality in civilized communities, resulting from the pernicious habit above described; and under the conviction that its most efficient remedy is in the cradle, if I had a million dollars to give, to do the best charity I could with it, I would invest it in four millions of these little books, and bequeath them to the mothers*

*of the poor, and the rich, of all countries. I would not get a monument or a statue, nor a medal; but I would make sure of that which would be much better-- self credit for having bequeathed to posterity that which has a much greater value than money."*

**And so, in parallel to the last pages of their books-- BOTH great men-- George Catlin, and Dr Weston A Price end their books with the same concept:**

**“How much service have I rendered my people?”**

**In closing, the findings of the often quoted 30 year 5,200 person Framingham Heart Study <sup>68</sup> also validates George Catlin’s conclusion that *“the great secret to life is the breathing principal”:***

**The 1981 Framingham Study indicated that “force vital capacity” <sup>69</sup>-- the maximum volume of air that a person can exhale after a maximum inhalation-- is the primary predictor for long term health and vitality:**

Framingham medical researchers Wm B. Kannel and Helen Hubert state: "This pulmonary function measurement appears to be an indicator of general health and vigor and literally a measure of living capacity". <sup>70</sup> According to Dr. Kannel of the Boston School of Medicine: "Long before a person becomes terminally ill, vital capacity can predict life span." <sup>71</sup> It is interesting to note: the internet has simple methods of determining your Vital Capacity at home. <sup>72</sup>

**80% to 90% of all of the body’s metabolic energy production is created by oxygen,<sup>73</sup>-- and only 10% - 20% is created from food and water. <sup>74</sup> As well-- with the respiratory system being responsible for eliminating 70% of the bodily metabolic waste <sup>75</sup>-- more emphasis needs to be placed on optimizing “the breathing principal.”**

**Nobel Laureate Dr Otto Warburg stated in his 1924 cancer theory <sup>76</sup>: “Summarized in a few words, the prime cause of cancer is the replacement of the respiration of oxygen in normal body cells by a fermentation of sugar.”**

**Is it possible then, that the same would also hold true with regard to the role of oxygenation in exacerbating or alleviating the Gut and Psychology Syndrome? <sup>77</sup> The effects of an “over-packed suitcase” cranium and improper airway formation in the fetus, throughout infancy and childhood may play a greater role-- via snoring, sleep apnea (and the less obvious lack of optimal oxygenation during the day) than we have previously considered in dealing with physical as well as mental health conditions. What is cause and what is effect?**

**The good news is:** Even with the rise in pollution reducing oxygen levels, we can become more efficient at increasing oxygen saturation at the cellular level. However-- “how to properly oxygenate” is a very complicated issue. One must balance CO2 and oxygen levels effectively to avoid hyperventilation, deep breathing is not always indicated-- and there are many divergent philosophies. Yoga Journal’s Roger Cole, Ph.D., who is a Stanford trained sleep physiologist <sup>78</sup>, Dr Andrew Weil <sup>79</sup>, and triathlete John Douillard <sup>80</sup> advocate that diaphragmatic breathing is the key-- and that most people breathe improperly: only in the upper chest area. The NIH has funded many studies of diaphragmatic breathing as well. <sup>81</sup> To some, this would indicate that the more oxygen one can take in-- the healthier one will be. However, Buteyko Breathing practitioners <sup>82</sup> cite the Bohr effect <sup>83</sup>, and advise that we can actually increase oxygenation of the cells more efficiently by breathing LESS: it is the proper CO2 level that actually creates oxygen availability. <sup>84</sup>

It is a worthwhile subject to study the breath: it is something we do 30,000 times a day <sup>85</sup> and something we are not aware of for 1/3 of our lives that may be undermining our health. Spiritual seekers for centuries have claimed mastering the breath unlocks the mysteries of the Universe. <sup>86</sup> But-- according to respiratory physiology expert Roger Price <sup>87</sup>: learning to breathe properly is a fundamental, “mainstream” issue; it is not to be avoided because it is a “sacred” issue, or an “alternative care” issue.

Links are attached below to websites that may be of help in uncovering how best to breathe for optimum health-- beginning with calm nasal breathing both day and night: “Shut Your Mouth... and Save Your Life.”

**One parting thought comes to mind:**

**The breathing principal must go hand in hand with the nutrition principal... and the sustainability principal. But first-- it must be guided by the wisdom principal.**

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### Catlin's advice on sleeping posture:

*"It is very evident that the back of the head should never be allowed, in sleep, to fall to a level with the spine; but should be supported by a small pillow, to elevate it a little, without raising the shoulders or bending the back, which should always be kept straight."* **Studies show now Catlin's advice to be sound: elevating the head at night is recommended by most apnea sites to reduce sleep apnea.** <sup>88</sup>



**Catlin's advice on how to keep the mouth shut at night:** *"When you lay your head upon a pillow, advance it a little forward, so as to imagine yourself in a gallery of a theater looking into the pit..."* <sup>89</sup> (For the full text, see Catlin's book pp 18-40)

**Catlin showed both side and back sleeping:** *"Lying on the back is thought by many to be an unhealthy practice; and a long habit of sleeping in a different position from infancy to old age may even make it so; but the general custom of the Savage Races, of sleeping in this position from infancy to old age, affords very conclusive proof, that if commenced in early life it is the healthiest for a general posture that can be adopted."*

### Is head elevation one of the keys?

**From my own personal experience-- elevating the head also has the effect of reducing nasal congestion which seems to be present in the reclining position. This is not only in myself-- but a great many others I speak with.** If blood flow to the sinus cavity causes congestion and obstructs nasal breathing when lying flat with a small pillow, then mouth breathing is the only other option-- and the "lip seal" which naturally occurs with closed mouth breathing that holds the tongue forward suctioned up in the maxilla at the roof of the mouth and out of the way of the airway will be lost. However-- by opening the mouth to breathe-- the same "lip seal" releases the tongue and allows it to fall back into the throat to obstruct the airway and cause sleep apnea. Therefore-- it is **CRITICAL** to have clear and unobstructed nasal passages in order to breathe only through the nose at night-- to have a healthy night's sleep.



**By the simple measure of elevating the head to an angle where both nasal congestion does not occur, AND the mouth can be kept shut-- then the stage will be for more successful nasal breathing during sleep.**

Nancy C. Henderson, M.F.A. has a Master's degree in Fine Art, and 30 years of professional Fine and Commercial art experience-- including portrait painting. As an infant, she was unable to nurse properly without colic; subsequently, her mother nursed her for 6 weeks before giving up and bottle feeding her. Nancy developed a small palate that did not allow room for 6 adult teeth-- along with many GAPS syndrome symptoms. Her story in overcoming reduced airway issues including sleep apnea is on her website, along with a longer version of this article and many images: [web.me.com/nancyhenderson](http://web.me.com/nancyhenderson)

## REFERENCES

1. McCracken, Harold, "George Catlin and the Old Frontier" Bonanza Books, Crown Publishers, New York, 1959. p. 40
2. <http://americanart.si.edu/catlin/index.html> and <http://160.111.252.10/luce/lightbox.cfm?search=catlin>
3. Smithsonian American Art Museum, 1832 Blackfoot/Kainai, [catlinclassroom.si.edu/catlin\\_browsepagetribe.cfm](http://catlinclassroom.si.edu/catlin_browsepagetribe.cfm)
4. Catlin, George, "Letters and Notes on the Manners, Customs and Conditions of the North American Indians," Volume 1, p. 2
5. Hassrick, Royal B. "The George Catlin Book of American Indians", Watson-Guptill, 1977, p. 23
6. *Ibid.*, p. 15-31
7. Price, Weston A. DDS., "Nutrition and Physical Degeneration," Price Pottenger Nutrition Foundation, 1939
8. This and all quotes following by George Catlin are from: Catlin, George, "Shut Your Mouth... and Save Your Life" 4th Ed., 1870, N. Truebner and Co, (now available at: Kessinger Publishing, Whitefish, Montana)
9. New York Public Library Digital Gallery, Image ID: 818592, "Mandan Indian artifacts, 1830s.", [digitalgallery.nypl.org](http://digitalgallery.nypl.org)
10. Smithsonian American Art Museum, 1844, Iowa, [catlinclassroom.si.edu/catlin\\_browsepagetribe.cfm](http://catlinclassroom.si.edu/catlin_browsepagetribe.cfm)
11. Smithsonian American Art Museum, 1837- 39, Assiniboine/Nakoda [catlinclassroom.si.edu/catlin\\_browsepagetribe.cfm](http://catlinclassroom.si.edu/catlin_browsepagetribe.cfm)
12. McCracken, Harold, "George Catlin and the Old Frontier," Bonanza Books, Crown Publishers, New York, 1959. p. 205
13. <http://members.westnet.com.au/pkolb/indians.pdf>
14. Wikipedia search: "Swaddling" <http://en.wikipedia.org/wiki/Swaddling>
15. Smithsonian American Art Museum, 1835/36, Iroquois/Haudensaunee, [catlinclassroom.si.edu/catlin\\_browsepagetribe.cfm](http://catlinclassroom.si.edu/catlin_browsepagetribe.cfm)
16. This, and the following B/W illustrations are by: Catlin, George "Shut Your Mouth... and Save Your Life" pp 9-30
17. Silkman, Raymond, DDS., "Is it Mental or is it Dental?--Cranial & Dental Impacts on Total Health", Wise Traditions quarterly magazine of the Weston A. Price Foundation, 2005-06 (Also via online search)
18. *Ibid.*
19. <http://www.sleep hotline.com/Sleep/categories/Breathing-Sleep.html> Or Search: "Sleephotline.com" Breathing> Sleep
20. <http://www.nosebreathe.com/> Steven K. Sue, D.D.S., M.S., Inc.
21. *Ibid.* Or, search: "Nosebreathe"
22. Need reliable non commercial citation-- but no access to: <http://www.jstor.org/pss/3436442>
23. Wikipedia search: "Snoring" <http://en.wikipedia.org/wiki/Snoring>
24. [http://en.wikipedia.org/wiki/Sleep\\_apnea](http://en.wikipedia.org/wiki/Sleep_apnea) Or, search: Wikipedia> sleep apnea> prevalence
25. *Ibid.*
26. Reichmuth, Kevin J., "Association of Sleep Apnea and Type II Diabetes," American Journal of Respiratory and Critical Care Medicine Vol 172. pp. 1590-1595, (2005) Search also: "The CDC says that 1 in 3 American children born in 2000 will develop diabetes according to the National Sleep Foundation": [www.sleepfoundation.org/](http://www.sleepfoundation.org/)
27. [www.sleepandyou.com/sleep-connections-diabetes.htm](http://www.sleepandyou.com/sleep-connections-diabetes.htm)
28. [www.healthiergeneration.org](http://www.healthiergeneration.org)
29. Ayazi, Shahin, "Obesity and Gastroesophageal Reflux: Quantifying the Association Between Body Mass Index, Esophageal Acid Exposure, and Lower Esophageal Sphincter Status in a Large Series of Patients with Reflux Symptoms," J Gastrointest Surg. 2009 August; 13(8): 1440-1447.
30. <http://www.nosebreathe.com/mouthbreathing.html> Or, search "Nosebreathe"> mouthbreathing
31. Bailey DR; "Tension headache and bruxism in the sleep disordered patient" Cranio 1990 Apr; 8(2):174-82
32. Price, Weston A. DDS., "Nutrition and Physical Degeneration," Price Pottenger Nutrition Foundation, 1939, p.368
33. Marcus CL et al. "Obstructive sleep apnea in children with Down syndrome." Pediatrics 88(1):132-139, 1991. Also see: <http://www.ds-health.com/apnea.htm> Obstructive Sleep Apnea and DS by Dr. Len Leshin, MD, FAAP 1997-2003
35. <http://curtis.library.northwestern.edu/curtis/toc.cgi?sec=&psec=nai.08>, Northwestern University Library Digital Collections
36. Pope, Sarah, "The Right Way to Swaddle" New York Times >Well> Blog 1-14-08. See also: [thehappiestbaby.com](http://thehappiestbaby.com)
37. Andrews, Margaret, et al., "Transcultural Concepts in Nursing Care" Lippincott, Williams and Wilkins, p 125
38. <http://www.medscape.com/viewarticle/543658> "Childhood Obstructive Sleep Apnea Linked With Altered Brain Metabolites, Lower IQ from Medscape Today" Marlene Busko 2006
39. National Sleep Foundation, <http://www.nlm.nih.gov/medlineplus/sleepapnea.html>
40. [www.nhtsa.dot.gov/people/injury/drowsy\\_driving1/human/drowsy\\_driving/](http://www.nhtsa.dot.gov/people/injury/drowsy_driving1/human/drowsy_driving/) - 10k - 2006-03-09 Search: National Highway Traffic Safety Association >Wake up and Get some Sleep Campaign
41. 4 out of 100 have all wisdom teeth: Need citation. Try: <http://lib.bioinfo.pl/meid:206664>
42. Northwestern University Library, Edward S. Curtis's "The North American Indian: the Photographic Images"
43. Search: "Care2 Karen S Cradleboard Collection" (252) See also: U of Oregon Cradleboards, Also: Cradleboards Postcards
44. Search: American Museum of the American Indian Cradleboard Collection See also Callahan, Maureen, "Cradleboards and Having and Opinion" University of Pennsylvania Museum Archives March 27 2009 <http://pennmuseumarchives.wordpress.com/2009/03/27/cradle-boards-and-having-an-opinion/#comment-1707>
45. Chisholm, James, "Navajo Infancy: an Ethological Study of Child Development" Aldine, p. 164, (85% time spent in sleep)
46. Lipton, Bruce, Ph.D., "The Biology of Belief," Hay House, 2005
47. *Ibid.*, <http://www.bruce-lipton.com/>
48. See Sally Fallon audio files. Need specific citation
49. Silkman, Raymond, DDS., "Is it Mental or is it Dental?--Cranial & Dental Impacts on Total Health", Wise Traditions in Food Farming, and the Healing Arts, the quarterly magazine of the Weston A. Price Foundation, 2005-06 (Also by search)

50. [http://www.marchofdimes.com/printableArticles/14332\\_1210.asp](http://www.marchofdimes.com/printableArticles/14332_1210.asp)
  51. [web.me.com/nancyhenderson](http://web.me.com/nancyhenderson)
  52. McCracken, Harold, "George Catlin and the Old Frontier" Bonanza Books, Crown Publishers, New York, 1959. p. 36
  53. Eastman, Charles A, Dr. "Ohiyesa", "The Soul of an Indian, an Interpretation", London, 1902, 1911
  54. Thompson Seton, Ernest, "Gospel of the Red Man" reprinted by Book Tree, 2006
  55. Wikipedia.com Search: "Breathing" <http://en.wikipedia.org/wiki/Breath> (page may have been edited/in progress)
  56. Wikipedia search: "Biological functions of Nitric Oxide"
  57. *Ibid.*
  58. Coleman-Phox,, Kimberly, MD, et al., "Use of a Fan During Sleep and the Risk of Sudden Infant Death Syndrome" Arch Pediatr Adolesc Med. 2008;162(10):963-968.
  59. Gerard, Claudia M. MD, "Spontaneous Arousals in Supine Infants While Swaddled and Unswaddled During Rapid Eye Movement and Quiet Sleep" PEDIATRICS Vol. 110 # 6 December 2002, pp. e70, Also: Franco, Patricia MD, PhD, "Influence of Swaddling on Sleep and Arousal Characteristics of Healthy Infants", PEDIATRICS Vol. 115 # 5 May 2005, pp. 1307-1311
  60. See citation for Dr Prices quote: "Dental deformities arise with altered facial structure"61. Williams, Louisa, Dr., "Radical Medicine", International Medical Arts Publishing, 2007-2008,
  62. *Ibid.*, p.765
  63. Online at the WAPF site. Search "Is it Mental or is it Dental" See: "The Final Answer">Adaptive Capacity
  64. *Ibid.*, See "Sympathetic Overload", and for Dr Sue: See Nosebreathe.com Mouthbreathing
  65. Search: "Ask The Doctor About Allergies and Hay Fever" on the WAPF site, 2000 See also on the WAPF site: "What Causes Heart Attacks?" and note heading "Be Kind to Your Adrenals." Also search WAPF site: "Cowan Adrenals", and "4196 Diseases of Adrenal Insufficiency" on [www.fleetwoodonsite.com/product](http://www.fleetwoodonsite.com/product)
  66. Rind, Bruce, "Low metabolic Energy Therapies, Addressing Thyroid and Adrenal Insufficiency", Wise Traditions, Summer 2009, See also: [thyroid.about.com](http://thyroid.about.com)>Thyroid Disease and Sleep Apnea> exhausted See also: SKJODT, Neil, et al., "Screening for Hypothyroidism in Sleep Apnea", Am. J. Respir. Crit. Care Med., Volume 160, Number 2, August 1999, 732-735
  67. Citation needed: a quote from Dr Price on Dental Foci
  68. [http://en.wikipedia.org/wiki/Framingham\\_Heart\\_Study](http://en.wikipedia.org/wiki/Framingham_Heart_Study) also available on <http://www.nih.gov/> Also see another 30 year study with the same conclusion: <http://www.buffalo.edu/news/4857> (lung function and death risk relationship) Holger Schunemann, MD "It is surprising that this simple measurement has not gained more importance as a general health assessment tool,"
  69. Wikipedia search: "Vital Capacity" [http://en.wikipedia.org/wiki/Vital\\_capacity](http://en.wikipedia.org/wiki/Vital_capacity)
  70. <http://www.ncbi.nlm.nih.gov/pubmed/> <http://www.nih.gov/> (need specific location of quote.)
  71. <http://www.ncbi.nlm.nih.gov/pubmed/> <http://www.nih.gov/>
  72. WikiAnswers.com search: "How do you measure vital capacity at the bedside?" See also: "ScienceBuddies.org"> Breath of Life, See also: "Teachingk-8.com"> lung capacity, See also: Buteykoclinic.com> buteyko method> control pause, For a demonstration of Vital Capacity, see B.K.S. Iyengar in his late seventies: Search: "YouTube Iyengar Pranayama"
  73. Re: 80-90% of body's metabolic... need citation from a reliable non commercial source such as Pub Med.
  74. *Ibid.*
  75. *Ibid.*
  76. Wikipedia.com, Search: Otto Warburg, or: [http://en.wikipedia.org/wiki/Otto\\_Heinrich\\_Warburg](http://en.wikipedia.org/wiki/Otto_Heinrich_Warburg)
  77. Campbell-McBride, Natasha, Dr., "Gut and Psychology Syndrome", Medinform Publishing, 2005
  78. Roger Cole, Ph.D: <http://sleepknowledge.com/> (2 breathing Podcasts) Also search YogaJournal.com: "Your Best Breath"
  79. Dr Andrew Weil: Search "DrWeil.com breathing" See: "The Art and Science of Breathing" "Three Breathing Exercises"
  80. Doulliard, John, D.C. "Body Mind and Sport", Crown Publishing, 1994 <http://www.lifespaspa.com/about.aspx>
  81. "Performing your original search, "NIH study diaphragmatic breathing effects," in PubMed Central will retrieve [75 citations](http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=1846091). "<http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=1846091>"
  82. Wikipedia search: "Buteyko", see also: , [www.buteykoabc.com/](http://www.buteykoabc.com/) [www.buteykoclinic.com](http://www.buteykoclinic.com) [www.buteyko.info](http://www.buteyko.info) (See research)
  83. Wikipedia search: "Bohr": [http://en.wikipedia.org/wiki/Bohr\\_effect](http://en.wikipedia.org/wiki/Bohr_effect)
  84. [www.breathingwell.org](http://www.breathingwell.org) >Physiology of Breathing >Internal Respiration Also search Wikipedia: "Oxygen Bar"> Precautions
  85. [http://wiki.answers.com/Q/How\\_many\\_times\\_a\\_day\\_do\\_we\\_breathe](http://wiki.answers.com/Q/How_many_times_a_day_do_we_breathe) <http://www.lumrix.net/medical/reflexes/breath.html>
  86. Wikipedia search: "Pranayama" <http://en.wikipedia.org/wiki/Pranayama> Note: "cessation"
  87. Roger Price, B.Sc., [www.buteykoabc.com](http://www.buteykoabc.com), [www.breathingwell.org](http://www.breathingwell.org), [www.levityhealth.com.au](http://www.levityhealth.com.au) "Capno Learning"
  88. [www.sleepassociation.org](http://www.sleepassociation.org), <http://www.sleepapnea.org/resources/pubs/treatment.html>, Wikipedia has under "Treatment": "Sleep in reclining position instead of flat", Search: MDConsult.com: "Elevate head of bed Apnea" Also see: Skinner, Margot, "Elevated Posture for the Management of Obstructive Sleep Apnea", Springer Berlin Volume 8, Number 4 / October, 2004
  89. Catlin, George, "Shut Your Mouth... and Save Your Life" 4th Ed., 1870, N. Truebner and Co, (now available at: Kessinger Publishing, Whitefish, Montana) pp 18-40
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