ANEMIA - IT'S NOTHING TO JOKE ABOUT...

AND A DANGEROUS FIRST WARNING SIGN TO SO MUCH!!!

Return To HOME Page

The more I research... the more I come to see anemia also very much fits into so many disorders.. including autism, schizophrenia, Alzheimer's, diabetes, hemochromatosis, cancer and much more.

Those who find themselves joking and saying "I'm anemic" and brushing it off as "something common" and "something not to worry about" may find they have nothing to laugh about after reading this section!

Most doctors do not understand anemia... they think it only has to do with "iron levels"... it doesn't... and as we will see... "treating" anemia by giving iron may be sending patients to an early death!

The following is the definition of anemia from the Iron Overload Disorders Association - an association that knows all too well that most anemias are more than likely the result of IRON LOADING NOT iron deficiency!

"ANEMIA" : "a deficiency of red cells or hemoglobin, or red cells that die too young or are discolored or possess an abnormal shape, or red cells that lack adequate iron."[1]

Another article on anemia and its causes stated the following - I quote:

"Anemia was caused by:

1.Blood loss: excessive bleeding such as hemorrhages or abnormal menstrual bleeding, 2.Chronic Illness: inflammatory diseases, arthritis, kidney or liver failure, chronic infections, 3.Cancer therapy: Surgery, radiotherapy, chemotherapy, and/or immunotherapy, 4.Infiltration (replacement) of bone marrow with cancer , 5.Breakdown or destruction of red blood cells, 6.Decreased red cell production due to low levels of erythropoietin (a hormone produced by the liver and kidney which promotes red blood cell proliferation)." [2]

Note that not one of these 6 causes of anemia mentions "iron" per se... nor does this definition state that anemia is caused by "low iron levels".

Indeed, if you look at the causes of anemia listed above... they are all very serious and as such, it is absolutely amazing to me that society does not take anemia more seriously. Truly... once you start to understand some of the issues associated with "anemia", one can only come to see it as a sign of something very wrong.

In North America, you would probably need to be on a starvation diet to have iron deficiency anemia [1]... chances are much more likely - in North America - that patients are suffering from IRON-LOADING ANEMIA and so... instead of focusing on the first part of the definition for anemia... doctors in North America appear to be solely focusing on the last and perhaps more irrelevant part of the definition - and indeed - missing the bigger picture as far

as the early warning sign of "anemia" as an IRON LOADING disorder in which IRON SHOULD BE REMOVED - NOT ADDED!

Read on...

The above definition of anemia was part of a larger presentation given at a National Institutes of Health Conference in June of 2001by Roberta Crawford, President of the Iron Overload Diseases Association. More of what was said at that conference is presented below - I quote:

"A New Perspective on Iron Deficiency

Presentation Given by Roberta Crawford in June 2001 at NIH Workshop in Bethesda, MD

A prevailing myth says that iron deficiency is the world's greatest nutritional problem.

Let's define anemia: a deficiency of red cells or hemoglobin, or red cells that die too young or are discolored or possess an abnormal shape, or red cells that lack adequate iron.

Now defining iron deficiency—so-called "normal" iron levels vary from lab to lab. Most "normal" levels are set too high. Saturation: 12 to 40-45% is reasonable at the present time. Ferritin: 5 to probably 50. As our years of study have shown, we have had to lower these levels several times to be safe.

Think about it. If "normal" levels are set artificially high, and your levels fall below that "normal," you are "iron deficient."

So how much iron does the human body really need? Iron is not excreted. The iron you absorb stays and accumulates in storage except that you can lose one milligram a day through hair, finger nails, skin cells and other detritus. That is the amount needed every day to replace the loss. One milligram. (Women in reproductive years, one and a half milligram).

The RDAs or RDIs recommended by the Food and Nutrition Board is out of date and incorrect. The other way to lose iron, of course, is by blood loss.

The normal levels of iron need to be lowered.

Hemoglobin is not iron! Unfortunately physicians prescribe iron to anemic people who test with low hemoglobin. Yes, the patients are anemic, but the iron is collecting in storage instead of going into hemoglobin. These people are iron-loaded. They need iron removed despite the anemia. The anemia should be treated with B vitamins, especially B12, B6 and folic acid. Many patients with anemia are dying of iron overload, and some are hastened to their death by their physicians who give iron. Blood banks seem to believe that hemoglobin and iron are the same. They have prepared lists of high iron foods to give out to donors with low hemoglobin. They invariably tell these people: "Your iron is low." Dangerous misinformation.

Physicians like to diagnose or rule out a disease called hemochromatosis. That causes confusion and many problems. There is no consensus. Doctors hesitate to treat without a diagnosis. Too bad that word was ever invented. Each patient is different with different symptoms and different iron levels.

First: treatment does no harm whether there is excess iron or not. A cutoff is set on hematocrit to prevent severe anemia, and when the patient tests under that cutoff, blood is not taken that day. Giving blood is beneficial.

Second: even a small amount of excess iron can damage heart and brain and other storage sites in the body and lead to heart attack or stroke. It is foolish to wait until iron levels confirm "hemochromatosis."

There is exaggerated concern when hemoglobin falls temporarily, following surgery, for example. Blood transfusions are over-used. A study shows that surgery patients who do not receive transfusions survive better than those who do. [NEJM Feb 1999 340:409-17]

Before taking iron you must test saturation and ferritin. (Ferritin indicates storage iron, which is not essential to maintain life). If both saturation and ferritin are extremely low, you must discover why. Low iron is a signal that iron is being used by cancer cells or is feeding bacteria, or usually it means there is chronic daily blood loss. The bleeding could be from an ulcer or tumor, etc. The source must be found.

Iron is in just about everything. If you are not absorbing the one daily milligram, you are truly on a starvation diet, and low iron is the least of your worries" [1, emphasis added].

Thus, what many doctors may see as "anemia" may actually be IRON OVERLOAD manifesting itself with iron going to storage instead of blood production... and as such, according Roberta Crawford's article on iron overload, giving an "anemic" person iron may actually be precipitating that person's death!

So... how is it that anemia may be a sign of IRON OVERLOAD... and how is it... that anemia may actually be part of a process by which the body attempts to heal itself from IRON TOXICITY? Read on...

We see anemia in many conditions... by itself... in pregnancy, diabetes, autism, and on and on and on...

Let's examine a few things that play into this and all the "anemia" we are seeing today as it relates to iron!

The body only absorbs 1 mg of iron (Fe) per day. It also only flushes 1 mg of iron (Fe) per day. Because the body can not easily flush iron, the rest goes to STORAGE [3]- which can eventually lead to cancer and/or hemochromatosis (iron overload), or to diabetes - which then can skyrocket your chances of getting Alzheimer's.

Many doctors are not worried about iron because they think the body absorbs the nutrients it needs and flushes those it has in excess... this is indeed true of many things... BUT NOT IRON!

"Iron balance differs from that of other trace elements [note: iron is supposed to be a trace element] in that it is regulated primarily by absorption, not excretion. Because the body's ability to excrete iron is very limited, intestinal iron uptake is closely restricted to about 1 mg/day, which is the amount usually excreted daily in the urine and feces." [4]

1 mg/day of iron is transferred to a newborn via from breastmilk… 1 mg/day of iron absorbed via the intestines… 1 mg/day of iron excreted by the human body… all "just coincidence", of course!

Breastmilk has over 200 components to it... with some components varying in "how much" the infant gets of a specific component during a feeding via breastmilk... but... one of the components that does not fluctuate in "how much is given" is iron... that is limited to 1 mg/day! [5, 6]

1 mg... 1 mg... 1 mg... a theme repeated over and over again... 1 mg!

So, how much iron do we really need? Only 1 mg/day... exactly the amount absorbed by the intestines each day and the amount we excrete!

Pregnant women only need 1.5 mg/day [1]...

This would make sense since during pregnancy there is no menstrual flow... up to 1/2 of the body's normal iron stores go to blood production... and as such... the cessation of the menstrual flow during pregnancy more than likely provides the proper amount of iron needed by that unborn child... without additional iron supplementation!

With virtually no studies on iron supplementation during pregnancy, how is it that the FDA can recommend 20-30 mg/day for pregnant women... what exactly is that recommendation based on? Where are the studies?... Likewise, how is it that some brands of prenatal vitamins provide up to 90 mg/day - like the ones I was placed on (with no reason given) during my pregnancy for my son - who is now autistic!

The body has no good mechanisms for getting rid of excess iron! I quote:

"Iron is very active chemically.

For example, it

*** binds nonspecifically to many proteins, with deleterious consequences to their structures.**

*** acts catalytically in assorted oxidation reactions, such as peroxidation of unsaturated lipids in cellular membranes.**

Because of this it is always found in bound form.

It therefore does not get excreted. Iron is lost from the body only by processes such as

*** bleeding**
*** sloughing of cells**
*** menstrual flow**
*** transfer to a developing fetus**

The body's iron content is regulated by controlling absorption." [7, emphasis added]. This is because iron is NOT easily excreted by the body... so, you have to control how much you take in and how much you absorb!

Note that vitamin C will greatly enhance iron absorption [1]... so... taking vitamin C with iron is probably not a very good thing if one is already taking in too much iron!

Of course, you can also add hair/nail growth to the list of how we excrete iron... perhaps explaining why so many women state their hair/nails seem to grow so well when they are pregnant. No reference on this one... just something I know from conversations with other women.

Note that a 70 kg male (that's about 150 pounds) has about 3.7 grams of iron in his body [7]. That's it!

Does anyone see a little insanity here? A 150-pound male has only 3.7 grams of iron in his body, and yet we are pumping pregnant women with iron doses of up to almost 20 grams of extra iron over the course of just one pregnancy?

Should we not be very concerned about the health of the mother and her unborn child given these astounding figures?

According to the Merck Manual, iron, like mercury, appears to lodge preferentially in the unborn child before the mother. I quote:

"Because iron is preferentially transported across the placenta, the neonatal Hct is generally normal despite maternal anemia, but total iron stores in these newborns are usually reduced, indicating a need for early dietary iron supplementation" [8].

So, what most doctors and indeed researchers and pharmaceuticals see as "anemia" may truly be "anemia" not due to lack of iron but due to IRON OVERLOAD!

And, not surprising to me, studies on iron supplementation during pregnancy are - and I quote - "almost non-existent" [9, emphasis added].

Yet, via prenatal vitamins, over the course of just 7 months, women could be getting close to an additional 5 grams to almost 20 GRAMS of iron - depending on the brand of prenatal vitamins used given prenatal vitamins could provide doses of iron of up to 90 mg/day [10].

Note this comment on how much extra iron will do damage to major organs – I quote:

"Normal body iron stores are 3-4 grams. Each unit of transfused red cells contains 200-250 mg of iron. Thus, a patient who receives 2 units of blood each month would accumulate approximately 5-6 g of extra iron in one year. Without treatment to remove excess iron, damage to the heart and other organs occurs in patients who have received as few as 100 units of blood, or 20 grams of excess iron. Visible signs of iron overload, such as bronze or slate grey skin pigmentation, don't usually appear until enough iron has accumulated to cause tissue damage [11, emphasis added].

Again, this can be the same excess iron load resulting from just one pregnancy!

This does not even begin to address damage from iron overload or other metal toxicity [i.e., from mercury dental amalgam, vaccines, aluminum, etc.] in the unborn and/or newborn child! :o(

It is interesting to note that up to 80% of pre-term infants today are born with jaundice and up to 60% of those who are full term have jaundice [12].

Most doctors/hospitals/researchers still don't appear to understand the fact that the "bilirubin is not the problem" but rather the sign of a problem – and I very much suspect a very serious problem at that. Indeed, if you read websites on jaundice, many will say that, "it

is nothing to be concerned about". This, in my opinion, only shows how "the high numbers" of children born with jaundice have made it such that it is "considered somewhat normal" to be born that way. Yet, clearly, bilirubin is only supposed to be found in cells in small amounts [13]. I quote:

"Bilirubin usually is present in low levels in cells; in high amounts it can be toxic and even deadly" [14].

Well, again, we need to ask, "Is it the bilirubin that is toxic or is it something else"? Given recent discoveries relating to bilirubin, it appears we may once again have been completely wrong in this critical area of "jaundice". I quote:

"Long considered more poisonous than precious, bilirubin starts to show its true colors as one of the human body's strongest defenders against oxidative assault" [15].

"So potent an antioxidant is bilirubin that it displaces glutathione, the molecule believed for 80 years to be the most important cellular antioxidant," says Solomon Snyder, director of Neuroscience at the Johns Hopkins School of Medicine…While it takes one glutathione molecule to consume an oxidant, a single bilirubin molecule can take care of 10,000 oxidant molecules, the scientists found" [15, emphasis added].

This certainly appears to be saying that bilirubin is the body's most powerful anti-oxidant for dealing with oxidative stress. Iron overload would result in oxidative stress.

Thus, bilirubin very much appears to be "a good thing", not a "bad thing" and its presence in excessive amounts in newborns is clearly a sign that these infants are dealing with oxidative stress. It is interesting to note that unconjugated bilirubin (part of the heme) is fat soluble and that bilirubin is water soluble.

Note also that there are 4 types of jaundice [16]. Indeed a child could be "born with" jaundice, or develop problems with jaundice believed to be associated with "breastfeeding" or "breastmilk" and jaundice tied to Rh Factor incompatibility [16]. Jaundice can also be caused by damage to the liver [17]. Excess iron in the liver has definitely been tied to liver damage (i.e., hemochromatosis, cancer of the liver, cirrhosis, etc.).

If indeed there are so many "types of jaundice" and jaundice results from excess bilirubin, now the most powerful antioxidant known to man, could it not be that jaundice is due not to "breastmilk" and the normal breakdown of red cells, but rather due to metal toxicity in infants and mothers. Both iron and mercury (i.e., from vaccines, dental amalgam and/or food sources) are known to pass to the unborn child.

Thus, again, we must ask: Is it the bilirubin or "jaundice" that is killing babies (highly unlikely given bilirubin is the body's most powerful antioxidant) or is it perhaps the underlying metal toxicity?

Note that mercury, for example, is known to pass to infants via breastmilk and that it lodges in infants up to 8 times more readily than in the tissues of the mother [18].

Both mercury and iron are known to disrupt the endocrine (hormone) system... hormones are needed for everything from production of insulin... to production of blood!

More basic facts:

KEY FACT: Iron and insulin modulate each other... trip up one...you'll trip up the other...

I quote from another critical article entitled "Cross-Talk Between Iron Metabolism And Diabetes" [19]: http://diabetes.diabetesjournals.org/cgi/content/full/51/8/2348:

"Emerging scientific evidence has disclosed unsuspected influences between iron metabolism and Type 2 diabetes. The relationship is bi-directional - iron affects glucose metabolism, and glucose metabolism impinges on several iron metabolic pathways" [19, emphasis added].

"Unsuspected influences" – keep that phrase in mind as we discuss the history of the diabetes-iron link later in this paper. I think you'll be VERY surprised to say the least! :o)

And, not surprisingly, Harvard had recently confirmed the same thing. I quote:

"In the first large study to assess iron stores and risk of Type 2 diabetes in an apparently healthy population, researchers from the Harvard School of Public Health (HSPH) found that higher iron stores were associated with significantly elevated risk of Type 2 diabetes, independent of other known diabetes risk factors. Higher iron stores were assessed by measuring blood concentrations of ferritin (a protein that stores iron in the body). The findings appear in the February 11, 2004 issue of the Journal of the American Medical Association (JAMA)"[20].

Well... that certainly was interesting... higher iron stores in women predict a much higher risk for Type 2 diabetes...

Now... where could women be getting all those "higher iron stores"? Another critical piece to the puzzle... PRENATAL VITAMINS.

We load women with iron in prenatal vitamin... and they develop... gestational diabetes... which then sets them up for type 2... which then significantly increases their chances of getting Alzheimer's!

"Diabetes mellitus was linked to a 65 percent increased risk of developing Alzheimer's disease (AD)... " [21].

Diabetes has long been associated with a greater risk of Alzheimer's disease... and now... diabetes is also much more associated with - anemia!

Anemia in diabetes is very common… with some studies showing up to 50% of diabetics as anemic… and in diabetes… anemia is believed to also be tied to renal or kidney failure… [22]

Note: "Erythropoietin is the hormone which naturally stimulates the marrow to produce red blood cells, and the kidney is its source" [23]

Iron is also known to accumulate in the kidneys... storage leads to tissue damage...

Are the kidneys being overworked in iron loading disorders as they help stimulate the production of red blood cells and address iron overload issues via the excretion of water soluble bilirubin (which can bind to iron) via urine production. Is this why "how often one has to go to the bathroom" is an indicator of potential diabetes?

In diabetes, it is generally believed that high glucose increases osmotic pressure of your blood, that this draws water from your tissues, causing them to be dehydrated [24] and that loss of water due to frequent urination then makes the blood thicker, leading to poor circulation [24].

Well... that may be one theory... I have another...

There are 8 known "healing sugars" - or glyconutrients. [25]

One of these "healing sugars" is GLUCOSE!

In diabetes, insulin is not going to the reduction of glucose levels.

If glucose is a "healing sugar"... and the food of the brain... perhaps that would make sense! It could be that the body needs that extra glucose to heal itself. And sugar... when added to blood... will certainly make it "thicker" and perhaps contribute to circulation issues. One

can live without an extremity - like a leg or an arm - thus, perhaps the glucose is simply being "better utilized" by the body as it attempts to heal itself! I quote:

"What common chemical added to blood greatly increases its storage time without adversely affecting the quality?"

The answer: SUGAR! [26] Salt on the other hand, stops blood from clotting [26].

NOTE: GLUCOSE IS A SUGAR! ...

... IRON AND INSULIN MODULATE EACH OTHER...

TRIP UP IRON>>> YOU'LL TRIP UP INSULIN...

If you trip up insulin... it stands to reason that you would also trip up iron... perhaps explaining why more and more diabetics are "anemic"... the "iron loading type" of anemia...

Thus, is it the "anemia" (iron storage issues) or "diabetes" (insulin issues) or quite plainly, the metal toxicity that is destroying the organs?

Are "anemia" and "diabetes" two sides of the same coin... an iron coin costing many a life!

Note that dialysis (required when the kidneys fail - something quite common in diabetes) is also an "iron loading procedure".

I quote: "The blood cleansing procedure leads to iron overload". [27]

There are now many scientists looking into the role of iron and insulin in disorders such as Alzheimer's and autism - two other iron loading disorders. Dr. William Frey II, Director of

the Alzheimer's Research Center in St. Paul, MN and one of the original editors of the Journal of Alzheimer's Disease is looking into insulin therapy for Alzheimer's.[28]

Dr. Bill Walsh of the Pfiffer Treatment Center in Chicago has been looking into the role of iron in autism. It is not surprising that Hannah Poling's mother had "gestational diabetes" and that her daughter developed "autism-like characteristics". This is the young girl whose parents (a neurologist and nurse) sued for vaccine injury and won as their daughter - after vaccination - developed a condition with "autism like characteristics".

When the Pfieffer Treatment Center's Dr. Walsh looked for issues of iron overload in the center's 3,000 children with autism, he found that about 1/3 had very elevated levels of iron [29].

I quote:

"Last year William Walsh, PhD of the Pfeiffer Treatment Center (Illinois) reported the following interesting data relating high iron and autism:"

"At the request of an autism parent group about 6 months ago, I checked out iron levels in our population of 3,000 autism patients. We found that autistic children exhibited higher serum iron levels than controls (non-autistic, healthy children). However, all of the differences occurred in about 1/3 of the autism population with the other 2/3 resembling the controls. The high iron kids were extremely high, the rest of the autistics were quite normal, and there was little or no "middle ground". It appears that a segment of the autism population has very abnormal iron metabolism (and abnormal ceruloplasmin)."

"My data essentially confirms the findings of the M.H. [Med Hypotheses. 2003 Aug;61(2):220-2.] article. Iron free radicals (ions) represent the primary oxidative stress in the brain of most humans. Autism involves oxidative stress during early brain development. In theory, elevated

iron in the brain could result in autism. A genetic inability to regulate iron might be causative in 1/3 of autism cases." (September 16, 2003)""[28, emphasis added].

Anemia is also very much associated with autism. [30] A search on the Internet will reveal many articles on this. I don't like to refer people to this research because I think most who think autism is due to iron deficiency do not understand anemia, iron deficiency or autism - just my humble opinion.

Interestingly, in autism, it is known that there is a 4:1 ratio of boys to girls with autism. Testosterone and estrogen impact serum iron levels with testosterone reducing serum iron measurements and estrogen – and oral contraceptives - increasing them [31].

"The male hormone, testosterone, stimulates the marrow to produce red blood cells" [23] - and that would certainly have implications for iron levels.

Note... some may be studying "anemia" in Alzheimer's and autism and thinking of "anemia" as "iron deficiency..."

Personally... I don't believe they are seeing the true "anemia" - the "iron LOADING disorder".

Note that some scientists are now calling Alzheimer's "type 3" diabetes. [32]

As Roberta Crawford of the Iron Overload Diseases Association has stated, a person would have to be on a starvation diet to be "iron deficient". Thus, it is much more likely that "anemia" in autism and Alzheimer's is more likely the result of IRON LOADING anemia!

Also, disorders such as autism and Alzheimer's are very much tied to vitamin B deficiencies.

"A deficiency of vitamin B6 can result in anemia that is similar to iron deficiency anemia" [33].

Thus... is it "anemia" that we should be diagnosing in these patients or vitamin B deficiency? Another very interesting question!

For those who want to dig deep into the issue of "genetics"... please see the Research File posted on my main web page (http://www.autismhelpforyou.com). It basically shows that at one time or another, every chromosome in the human genetic code was believed to carry "the key to autism" or "the autism gene"... the latest one in the news... chromosome 11... is the human insulin chromosome!

Note that "insulin has recently been shown to induce renewed expression of some inactive genes... " [34] That would mean... it can impact "genetics"... or cause a change in the genetic code! Indeed, we are now finding insulin producing cells unexpected places. I quote:

"Finding the insulin-producing cells in the thymus was no surprise... Finding the beta or insulin-producing cells in the liver, fat and bone was unexpected, however... the common denominator is high blood sugar - not lack of insulin or insulin resistance... where do the cells originate?... they arise from the same tissues that spawn many of the body's cells -the bone marrow... the insulin-producing cells in the various organs and tissues occur in both types of diabetes... " [35]

Note that infiltration of the bone marrow by cancer cells is considered one of the causes of "anemia" [2].... and that iron toxicity is very much associated with cancer. Iron overload is known as hemochromatosis. Note that hemochromatosis or iron overload is very much associated with cancer of the liver! [36]

I quote: For Cancer of the Liver: Risk factors "Hemachromatosis, a genetic disorder that causes excessive absorption and retention of iron in the liver". [36]

So... there is little doubt that excessive iron is tied to cancer... in fact... iron is known to feed all cells... and that includes cancer cells... as well as bacteria, viruses and parasites.

Anemia may also be very much tied to dementia in the elderly! In a recent study, elderly persons concerned about dementia were told they were probably "just anemic". [37] I quote:

"... correction of anemia in these patients might offer a chance to prevent such a cognitive decline." [37]

One of the causes of anemia listed above [2] was the destruction of red blood cells. This is something I wanted to spend more time on as within this "cause" of anemia, in my opinion, may be the answer to why anemia may actually make sense in iron loading disorders.

The blood is made up of hemoglobin. Hemoglobin is made up of 2 things... heme + globin. The globin part of the blood is that part of the blood which deals with immune system functions.

Let us take a closer look at the HEME part of the blood...

The heme part of the blood is also made up of 2 things... IRON + UNCONJUGATED BILIRUBIN.

In iron overload disorders, there is a tendancy to see the word "anemia" and think that early destruction of red blood cells (which carry iron and oxygen) would simply add to an already toxic iron load. The fact is... the iron from which red blood cells were made in the first place was already part of the body's iron load... and so... I doubt we can say we are "adding more iron" to the body when red blood cells are destroyed since that iron was "already there".

Since red blood cells carry oxygen, one can also see why oxygen depletion can be a sign of iron overload in anemias where red blood cells are destroyed early. Research also shows that obesity is a sign of cellular oxygen depletion. [38] It is also a well known fact that oxidative stress results from oxygen free radicals... thus... perhaps destruction of red blood cells inhibits "more oxygen radicals" from being formed which could lead to greater oxidative stress. Just a thought for those investigating these issues from a biochemical perspective.

Fatigue - often chronic fatigue - is something often manifested in those who are anemic. Note that fatigue is a sign of iron overload in women according to the Merck Manual section on Iron Overload. I quote:

"In women, fatigue and nonspecific constitutional symptoms are early findings; in men, cirrhosis or diabetes is often the initial presentation" [38]

Let us now look at the other part of the heme equation... red blood cell death or "anemia" as it relates to UNCONJUGATED BILIRUBIN...

It is difficult to explain why we would see "anemia" in iron overload since most people have - wrongly - come to think of "anemia" as an "iron deficiency" - a very inaccurate view of "anemia". The fact is, red blood cell death may actually play a key role in HELPING to address oxidative stress in iron overload... here's why...

Heme is made up of 2 things... iron + unconjugated bilirubin... so far... we have really only looked at the role of iron in all this... and I think it is fair to say that when it comes to "anemia", it seems the medical establishment as a whole has only focused on the "iron side" of the equation.

When red blood cells are destroyed (one of the definitions of anemia), yes, they do release iron but that iron, as stated above is already part of the body's iron load. But... the other thing that is released upon destruction of red blood cells is that unconjugated bilirubin - what many would call a fat soluble molecule!

Unconjugated bilirubin then goes to the liver and is made into bilirubin - a water soluble molecule that can bind to iron and a water soluble molecule that is much more easily excreted from the body. Note that bilirubin is easily broken down by sunlight (perhaps why so many who suffer from porphorias - another iron overload disorder) do worse when in the sun.

Here's the key to all this...

Bilirubin used to be thought of as a very, very, very, very bad thing... causing jaundice... which was believed to be "killing babies" in elevated levels - and remember - now - up to 60% of term newborns and 80% of premies have jaundice.

John Hopkins in 2002 showed that bilirubin (once believed to be very, very, very, very bad) is actually a VERY, VERY, VERY, VERY, VERY GOOD thing - it is now the most powerful antioxidant known to man - displacing glutathione which had held that position for over 80 years!

"Long considered more poisonous than precious, bilirubin starts to show its true colors as one of the human body's strongest defenders against oxidative assault" [15].

"So potent an antioxidant is bilirubin that it displaces glutathione, the molecule believed for 80 years to be the most important cellular antioxidant," says Solomon Snyder, director of Neuroscience at the Johns Hopkins School of Medicine…While it takes one glutathione molecule to consume an oxidant, a single bilirubin molecule can take care of 10,000 oxidant molecules, the scientists found" [15, emphasis added].

So... bottom line... bilirubin is 10,000 times more powerful than glutathione and that would be key in someone needing to address "oxidative stress" issues - as would be the case in iron loading anemias and other iron loading disorders - such as diabetes, autism, schizophrenia, alzheimer's, cancer, Down syndrome (yes... this fits into

it, too - see Redefining The Role of Insulin or Research File both posted on my main web page), etc.

Thus, if I have oxidation issues, as would be the case in such disorders, anemia now makes sense because with the destruction of red blood cells (one of the definitions of "anemia") comes the release of that critical unconjugated bilirubin which is then converted into that most valuable bilirubin in the liver - a water soluble molecule that binds to iron!

This, I believe, is the key to "anemia" in iron loading disorders or "anemia" itself as a sign of an iron loading disorder - NOT of iron deficiency.

If you didn't realize that bilirubin was now considered a very, very, very, very GOOD thing, "anemia" and premature destruction of red blood cells may not make sense as you look into issues of iron overload (and perhaps focus only on the fact that destruction of red blood cells releases iron into the system - but again - that iron was already there - and it gets recycled into new blood cells - thus you really are not "adding iron" to the system... it is already there).

So... when one comes to see bilirubin as a very, very, very, very GOOD thing... "anemia" in iron loading disorders now makes sense. Unfortunately, most in the medical and scientific communities do not seem to realize this new finding about bilirubin being the most powerful antioxidant known to man... in fact... most websites still portray bilirubin as a very, very, very bad thing... and that is very, very, very, very, very wrong indeed - and the implications of that are simply huge - especially since doctors continue to give iron when IRON NEEDS TO BE REMOVED in such iron loading disorders!

For those who want to dig much deeper into these issues, read my paper on REDEFINING THE ROLE OF INSULIN: Could it play a major role in metal detoxification? This paper goes into much greater detail on matters of anemia and other things that play into all this! This is a MUST READ PAPER if you concerned about any of these issues as anemia, in my opinion, is a precursor and perhaps first warning sign of very serious medical issues indeed!

If you want to dig deeper still... my huge RESEARCH FILE is also posted on my main web page... it is a 1200 page Powerpoint presentation that very much argues that autism-schizophrenia-Alzheimer's are one and the same disorder (all references are provided within the file) and that diabetes and anemia very much fit into this as well - as do many other disorders - such as Down Syndrome (what I now believe to be a major sign of metal toxicity in the womb - most folks don't realize it but if you have Down Syndrome, you are also 10 times more likely than the general population to have autism, by the age of 35 or so, 25% have a

brain that resembles that of an Alzheimer's patient... those with Down Syndrome are also more likely to have leukemia (cancers are tied to high iron levels) and they are also much more likely to have diabetes)!

Anemia is no longer something to just be "brushed off"... please take it seriously as the life you save may be your own... or that of a loved one!

1	Roberta Crawford, Iron Overload Disorders Association President, Presentation: A New Perspective on Iron Deficiency, National Institutes Of Health Workshop in Bethesda, MD, June 2001, http://www.ironoverload.org/anemia.htm
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Return To HOME Page

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