The TURMERIC Guide and Protocol

Discover How to Reap the Amazing Health Benefits of the Superstar of Spices!

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# Table of Contents

Table of Contents ........................................................................................................... 2

Part 1 ................................................................................................................................. 5

**Turmeric: the Spice for Life** .......................................................................................... 5
  * Introduction .................................................................................................................. 5

**The Golden Spice of Life** ............................................................................................ 6
  * A Brief History .......................................................................................................... 6
  * What Turmeric Is ....................................................................................................... 7
  * What it is not ............................................................................................................. 8

**Most Studied Herb** ...................................................................................................... 9
  * Traditional remedies and benefits ........................................................................... 9
  * Modern medicine applications ................................................................................ 10
  * Turmeric and the immune system ........................................................................... 13
  * Your doctor .............................................................................................................. 14
  * Comparative to Leading Drugs .............................................................................. 14

**Drug and Nutrient Interaction** .................................................................................. 17

**Quality Control** .......................................................................................................... 17

**How to Take Turmeric** ............................................................................................... 18
  * Why black pepper? ................................................................................................. 20
  * Why take it with oil/fat? ......................................................................................... 21
  * Why take it with food? ........................................................................................... 21
  * Ginger and Turmeric - Synergistic Effects .............................................................. 23
  * Protocol #1 ............................................................................................................. 24
    * Dosage .................................................................................................................... 25
  * Protocol #1.1 ............................................................................................................ 26
    * My Personal Tip ..................................................................................................... 28

**Cancer - Can Turmeric Help?** ................................................................................... 28

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Part 1

Turmeric: the Spice for Life

Introduction

Superstar of spices, Curcuma longa, or turmeric is a veritable cornucopia of health benefits that modern science is only recently paying attention to. 'Recently' meaning in comparison to its use since thousands of years in the traditional medicines of various Asian cultures.

For many persons who have only recently been introduced to the many benefits of taking turmeric regularly for maintenance or as a treatment, the spice seems so very exotic. A must ingredient for curries and little else.

However, it is not so exotic after all and is quite common. The Western world has used turmeric (or the isolated curcumin) for generations as a colouring agent in cheese, butter, dairy products, canned beverages, baked products, ice cream, yellow cakes, orange juice (yes), cake icings, biscuits, popcorn, sweets, cereals, sauces, gelatines and of course mustard. The next time you look at an ingredient list of processed foods, look for the E number E100. That's turmeric/curcumin.

But all that seems insignificant the more one learns about its true benefits far beyond its culinary applications. And that is where I hope this ebook will serve as a guide and clear any confusion about its many uses, safety and dosage protocol.

Dr. David Frawley
“If I had only a single herb to depend upon for all possible health and dietary needs, I would without much hesitation choose the Indian spice Turmeric.”

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A Brief History
Turmeric originates from India where it was not only used as a food but revered as an important medicinal plant in Ayurvedic medicine, a traditional medicine system in India that developed over 4,000 years ago. Ayurveda is a Sanskrit term meaning 'Science of Life' or 'Life Knowledge'.

From India, turmeric's use and applications spread throughout the Asian world for its healthy properties, cuisine and as a dye. Brought to Europe and beyond, in relatively recent years it has become a solid pillar in alternative and herbal medicine.

In more recent modern times, scientists in India - curious to understand this important plant - studied and wrote many scientific and medical abstracts, sharing these with western science.

Today Curcuma longa, as it is botanically known, is the most researched herbal medicinal plant with nearly 5,800 peer reviewed and published biomedical studies on its health benefits and properties. There are at least 600 potential preventative and therapeutic applications for turmeric as a result of these thousands of studies. In addition, there are 175 distinct, empirically proven beneficial, broad reaching physiological effects. Most of them correlating with the known, evidence based ancient traditional medicines of Asia.
There is seldom such a medicinal herb so powerful and so intensely researched and so beneficial for humankind as turmeric.

It's not a trend. Make turmeric part of your history, too.

**What Turmeric Is**

It is, in first place, a food supplement whether taken in food such as curries or stews but with a plethora of healthy side effects. For addressing particular illnesses, prevention or maintenance, it then becomes a potent natural medicine.

Curcuma longa (turmeric) constituents include three types of curcuminoids: curcumin (diferuloylmethane; the primary constituent and the one responsible for its vibrant yellow color), demethoxycurcumin, and bisdemethoxycurcumin. Further constituents are as volatile oils (tumerone, atlantone, and zingiberone), proteins and resins.

Of the volatile oils, turmerone is emerging as a particularly interesting constituent for research, showing promise for neural damage, and neural stem cell proliferation as well as certain cancers.

Phytochemical analysis of turmeric has isolated over 300 compounds. Of those, 100 are known to exist but for which there are yet names. Although curcumin is the principal curcuminoid, all three types of curcuminoids have potent pharmacological properties. The most studied constituent, curcumin is so diverse and rich in antioxidants and anti-inflammatories that it has shown to improve and protect every organ in the body.

The secret is in the dose, consistency in taking it and method. All of which you will learn later in this guide.

There are several studies comparing it to drugs it can replace and as of this writing, there is a possibility of at least 14, which I will cover later in this guide.
The part that is used is the rhizome, which like all rhizomes is rather easy to reproduce. Cut up one rhizome, ensuring that the pieces you wish to plant have a bud and plant not too deeply with the bud facing upwards. Cover with soil, water and wait. A tropical plant, it likes to be kept moist and warm in a sunny position. One plant can produce many, many rhizomes.

Turmeric powder is produced from boiled rhizomes that are then either traditionally sundried or in ovens and average between 2.5 to 5% curcumin and even as low as 1%, though this is not the norm.

**What it is not**

It is not a miracle healer - although some have called it their personal miracle. It will not heal a broken leg, all diseases and ailments nor can it right poor lifestyle choices. But it has quite possibly the longest list of issues it excels in. In fact, with over 50 healing actions it may help or treat more than 70 ailments.

Unlike pharmaceutical drugs, with side effects often outweighing the therapeutic ones, turmeric has hundreds of known side effects that have shown to positively regulate over 160 different physiological pathways. And the list keeps growing as science continues to scrutinize its possibilities.
**Most Studied Herb**

The list of both traditional folk and scientifically proven benefits of turmeric is impressively long. Science is continually studying the possible application and use of turmeric with ever increasing discoveries. In 2011, the book Herbal Medicine: Biomolecular and Clinical Aspects. 2nd edition mentioned 3,000 studies and abstracts on turmeric. The earliest abstract I happened across is from 1919.

Today, in 2016 that number has climbed to well over 6,000. It is truly the most studied herb possibly in history.

**Small amounts frequently and consistently:** In traditional use, the beneficial effects of turmeric are achieved through low level consumption, over long periods of time. This, of course has the added benefit of acting as a preventative measure. But, for the rational use of turmeric in the treatment of human disease, an accurate understanding of what defines an effective dose per type of illness, its safety and method of action seems essential.

However, modern pharma based medicine doesn't seem interested in scientists' recommendations for further studies to establish science based doses. After all, turmeric is so inexpensive and readily available to all. It cannot be patented.

**Traditional remedies and benefits**

As an experience based herbal medicine, turmeric is used for a broad range of ailments and has been used for over 60 maladies, such as:

- rheumatoid arthritis
- eye problems such as conjunctivitis and chronic anterior uveitis
- small pox and chicken pox
- urinary tract infections
- liver ailments such as jaundice
- gallbladder complaints and to increase the secretion of bile
- skin cancer and shows promise for other forms of cancer
• increase semen production (but some studies show it may slow sperm motility)
• increases fertility
• menstrual difficulties
• digestive disorders such as colic
• reduce the feeling of fullness and flatus
• abdominal pain and distension
• for dyspeptic conditions
• loss of appetite
• postprandial fullness (feeling full as soon as one starts to eat)
• diabetes
• Inflammatory skin conditions

Ayurvedic medicine recognizes the above and also includes:
• respiratory conditions (asthma, bronchial hyperactivity, and allergy)
• improving circulation
• improve overall energy
• stress related depression (helps to lower the stress hormone cortisol)

Turmeric has powerful anti-inflammatory, antimicrobial properties and is also used for cleaning and healing wounds.

**Modern medicine applications**
Modern empirical medicine is less than 100 years old with increasing reliance on chemical based pharmaceuticals since roughly the late 40's. Traditional, experience based medicine, in comparison, has served mankind for thousands of years, and in general is quite safe and effective. The mechanism of the scientific basis of traditional medicine, however, is less well understood.
Scientific and medical studies have proven that turmeric is a strong and effective anti-inflammatory and has over 50 healing actions, some of which include:

- antitumour
- anticoagulant
- antioxidant
- antiseptic
- antibacterial, antiviral
- antidepressant (stress related depression)
- immune system booster
- natural COX-2 inhibitor
- cardioprotective
- hepatoprotective (protects liver - helps to detox, increases glutathione)
- nephroprotective (protects kidneys)
- radioprotective (ie. for some radiation treatments)
- digestive activities
- cholesterol, lowers LDL and raises HDL
- mild to moderate bronchial asthma as an adjuvant therapy
- diabetes
- inflammatory skin conditions
- wound healing (often faster healing)

The main clinical studies of turmeric have been for the digestive organs: the intestine, the bowels, for the treatment of inflammatory bowel disease and the colon for treatment of colon cancer.

Science has shown turmeric to be effective in treating or slowing the progression of:

- Type 2 diabetes (helps control blood levels and can strengthen the pancreas which produces insulin)
• Age-related macular degeneration (protects the retina from damage caused by oxidative stress and light)
• Alzheimer's disease (binds to amyloid-A, preventing it from clumping which interrupts neural activity)
• Parkinson's disease (early studies show curcumin may inhibit oxidative damage leading to PD)

Professor Manohar Garg from the University of Newcastle's Nutraceuticals Research Group, UK comments:

"The root cause of type 2 diabetes is systemic inflammation, which impacts insulin secretion and function."

"Nowadays in India the level of curcumin (turmeric) intake has dropped considerably as people switch to Westernised fast foods, and it parallels with a significant rise in type 2 diabetes cases. In fact the disease is now an epidemic in India and may soon be the number one health burden."

All of this is very promising and encouraging, however, the most exciting research is about the effect of curcumin on cancer in vitro and in vivo. With more than 1,000 research studies, curcumin has proven to be effective against various cancers on many levels.

• inhibits activation of genes that trigger cancer
• inhibits the transmutation of normal cells to cancerous cells
• promotes apoptosis (programmed cell death - cancer cells lack this)
• inhibits the spread of tumour cells and can shrink them
• prevents angiogenesis (blood supply formation to cancerous cells)
• enhances the effects of chemo- and radiation therapies and can decrease their side effects

Some or all of these actions have been shown against 22 different cancers, such as breast, colon, lung and prostate and it slowed the progression of particularly
difficult cancers such as blood, bone, brain, oesophagus, pancreas and liver, melanoma, uterine and stomach.

**Turmeric and the immune system**

So much focus is on turmeric's most well known role in reducing or eliminating inflammation, that a very important (and perhaps the most important key) factor has remained largely underappreciated: its ability to significantly boost the immune system.

The immune system is our *defence system* made up of many biological structures and processes that protects us against disease. If this defence system is weakened for whatever reason it will have a domino effect within us. It may trigger dormant or borderline illnesses such as diabetes, allergies or autoimmune disorders, inflammation or even cancers.

Danish and American scientists have discovered that curcumin can cause a "modest but measurable increase" in levels of the protein cathelicidin antimicrobial peptide, or CAMP. This protein is important in the innate immune system, helping to prevent infection in humans and other mammals. Prior to this discovery, it was thought that CAMP levels were increased by vitamin D.

CAMP is an important part of what supports the immune system to fight off viruses, bacteria and fungi even those not previously encountered by the immune system. In humans, CAMP is the only known antimicrobial.

This is not only of significant interest to science but for all of us.

The 'how' of many of turmeric's positive effects are poorly understood. This "modest increase" in CAMP and its boosting effect on the immune system could well be the key to understanding why turmeric has such a long list of benefits nearly to the point of disbelief for those first introduced to this humble plant.
Your doctor
If you wish to use turmeric or curcumin for therapeutic purposes, then be sure to have a talk with your doctor or health practitioner. If they seem closed to the idea, then ask them why.

It could very well be that they never heard of it and brush off any methods that are not pharmaceutical drug based. Or it could be that they never heard of it but are open to natural or alternative methods.

Ask them if they have seen or are interested in the science behind it and let them know that with over 6,000 studies, that it is THE most studied herb in medical science history. In any case, copy and print off the links in the resources section and offer it too them.

However, your doctor may know about the latest research on turmeric and curcumin and still advise you against it. Ask why. It could be that there is a known negative drug interaction. Work out a plan for another compatible drug, if possible, that may be as effective during the time you wish to incorporate turmeric or curcumin in your health care plan.

Your doctor or health practitioner should work with you, not against you. If you encounter adamant resistance without an explanation, perhaps consider seeking a second opinion.

Comparative to Leading Drugs
Double-blind, placebo controlled trials have found curcumin proven to be more powerful than 14 of the world's best-selling drugs...but without the dangerous side effects (since writing this guide, the number is up to 19+ drugs). Over 6,600 peer-reviewed biomedical studies have proven its superiority over a wide variety of drugs, such as chemo drugs, statins, painkillers and antidepressants.

According to Dr. Joseph Maroon, Professor of Neurosurgery at the University of Pittsburgh, "It's similar to drugs but with none of the side effects of drugs."
monographs of the German regulatory authority, Commission E, also report that there are no known interaction of drugs with turmeric.

The following list is from Dr. Seers:

- Kills 16-times more cancer cells than the leading chemo drug Eloxatin — without harming healthy cells (*International Journal of Oncology*)
- More effectively treats Major Depressive Disorder (MDD) than Prozac (or Fluoxetine & Imipramine) — without devastating side effects, according to a randomized, controlled study.
- Lowers cholesterol and triglyceride levels better than the statin drug Lipitor (or Atorvastatin) (*Journal of Drug Research and Development*)
- "It's 400-times more potent than the diabetes drug Metformin" — reports Auburn University researchers (*Journal of Biochemical and Biophysical Research Communications*)
- Performs better in memory tests than the drug Aricept (the most widely prescribed Alzheimer's drug) — Salk Institute for Biological Studies
- Beats Celebrex for relieving knee arthritis pain (*Journal of Alternative and Complementary Medicine*)
- Relieves rheumatoid arthritis pain better than Ibuprofen (*Journal of Phytotherapy Research*) or aspirin.
- "Therapeutic effects are comparable to pharmaceutical NSAIDs... but with a major difference in that this compound is nontoxic and free of side effects." -Vanderbilt and University of Pittsburgh researchers (*Journal of Surgical Neurology International*)
- "Could enhance erectile function with more efficacy and more prolonged duration of action than Viagra" (*International Journal of Impotence Research*)
- "More effective in stopping the protein fragments from forming than many other drugs being tested to treat Alzheimer's" - Alzheimer's Department and Veterans Affairs researchers (*Journal of Biological Chemistry*)
• Destroys more colon cancer stem cells than FOLFOX (one of the most widely prescribed chemotherapy protocols) - Baylor University researchers

In addition, curcumin proved to be as effective as an anticoagulant and has anti-platelet and prostacyclin modulating effects when compared to aspirin. It is an effective alternative to anti-inflammatory drugs "in exerting anti-inflammatory and anti-proliferative activity against tumour cells".

The Doctor's Health Press site also mentions (click link to read more details):

• Universal anti-cancer spice
• Natural Painkiller for Arthritis
• Valuable for Diabetes
• Effective Immune System Booster
• Great for Wounds and Skin conditions
• Offers Prevention Against Alzheimer’s Disease
• Helps Ease Depression
• Reduces Annoying Digestion Symptoms
• Protection Against Heavy Metal Toxicity

In 2004, the University of Texas found that curcumin is equally effective for inflammation as 10 common anti-inflammatory drugs such as tamoxifen, aspirin, ibuprofen, dexamethasone, celecoxib, sulindac, phenylbutazone, indomethacin, diclofenac, and naproxen. A 2007 study University of Leicester in the UK found curcumin as just as effective as Oxaliplatin (a chemo drug).
Drug and Nutrient Interaction

Some drug interactions with turmeric may enhance a drug's action. In this case it may be possible to reduce or eliminate that drug. A much better option than eliminate turmeric - which has NO side effects. Other interactions may block a drug's effect, rendering it useless.

Use this link to check turmeric against any pharmaceutical drug you are currently taking: drugs.com Check with your health practitioner if you have any questions.

Turmeric is anticoagulant on a par with and similar to aspirin and NSAIDS and directly affects platelet adhesion. If you are on coumardin, you most likely will be monitored by your health practitioner. Newer anticoagulants such as xarelto are not usually monitored, so this may be a concern. Be sure to check with your health practitioner whether high doses of turmeric are right for you or whether your prescription can be reduced or even eliminated.

One of the best sites regarding drug interaction and turmeric is turmericlife.com.au (Dr. Doug English). Click here for his excellent drug interaction page.

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Quality Control

You can be certain that the turmeric purchased in supermarkets may not have been produced pesticide and toxin free, may have fillers and most likely will have average to less than average curcumin content. Remember that 3% is average. For culinary purposes now and again, this may not be a problem. However, for health purposes you must use turmeric from good sources that supply laboratory analysis that demonstrate that the curcumin is at least 3% or higher.
Here is an excerpt from my article *Turmeric: Does Your Supply Pass the Test?*

Purchase powder only from reliable, organic sources. In order for these companies to use the term "organic", they must meet high criteria, one of them being that full curcumin content must remain intact in the end product.

Remember that the above simple test is only for checking for impurities and not for curcumin content. Read much more in the original article and further tests for specific adulterants by clicking the above link.

Worried that using organic turmeric daily may not be economically viable for you? Read on, and I will show you how you can get even more out of using even less turmeric by making it more bio-available.

**How to Take Turmeric**

Powder, raw or paste? Ah, the 'to be or not to be' question. The answer to this common question really is dependent on how best you can take it and availability. Of course, the paste is made from the powder but I will cover that more later on.

Although one can use fresh rhizome, it must be cooked and never used raw - in spite of what the raw food/vegan/vegetarian Western world may assume and perpetrate otherwise.
The ideology of "raw is better" may hold true for fruits and many vegetables, however cooked peppers, carrots, spinach, mushrooms, cabbage, and many other vegetables also supply more bio-available vitamins, minerals and antioxidants when lightly cooked or even steamed - such as carotenoids and ferulic acid - than when eaten raw. Another example is cooked tomatoes, such as for sauces and paste, which will have more bio-available lycopene than raw.

Lightly cooking at low heat or steaming makes some vegetables more bio-available. And so it is with fresh turmeric rhizome.

In India, some recipes call for fresh (raw) turmeric as an ingredient such as in certain types of curries and pastries. Fresh turmeric rhizomes are even pickled which offers its benefits over 'raw' because the pickling process also enhances bioavailability.

**Powdered turmeric** is derived from boiled then sundried or baked rhizomes as I mentioned earlier. Still, to enhance its bio-availability, **turmeric in any form** must be consumed with food and with a lipid (oil/fat) and with a little freshly ground black pepper. With the addition of the pepper, absorption of the curcumin is boosted by an astounding 2000% (this means 20 times).
**Why black pepper?**

Piperine is a constituent in black pepper and is a potent inhibitor of drug metabolism. One way that the liver rids our bodies of foreign substances is to make them water soluble (which turmeric isn't) so they can be more efficiently excreted. But, piperine inhibits that process by slowing down the conversion process in the liver, thus allowing turmeric to circulate for much longer in the bloodstream.

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*How piperine increases the bioavailability of many substances*

Piperine has the remarkable ability to manipulate all four of these mechanisms. It inhibits a number of enzymes responsible for metabolizing drugs and nutritional substances; it stimulates the activity of amino-acid transporters in the intestinal lining; it inhibits p-glycoprotein, the ‘pump’ protein that removes substances from cells; and it decreases the intestinal production of glucuronic acid, thereby permitting more of the substances to enter the body in active form. Consequently, some of these substances are able to reach, enter, and remain within their target cells for longer periods of time than would otherwise be the case. Of course, this can be a mixed blessing – if one is using a drug for which the therapeutic level is not substantially lower than the toxic level, piperine supplementation might raise the bioavailability of the drug until its intracellular concentration exceeds the toxic threshold. On the other hand, piperine supplementation can sometimes turn a marginally effective therapeutic substance into a highly effective one simply by increasing its bioavailability and intracellular residency time. A good example of this latter phenomenon is the use of piperine to increase the bioavailability of curcumin, a supplement with broad activity against cancers, inflammation and infections. A 20 mg dose of piperine

Studies have demonstrated the **difficulty of the bio-availability of curcumin** in turmeric, with but a shallow blip in the blood levels. However, the same amount taken with black pepper showed an astounding 2000% spike in blood levels, **peaking after approximately one hour**, and lasting about three hours.

The other side of piperine’s mechanism is that it also boosts (and can also inhibit) the effectiveness of certain prescription drugs. Not always a good thing. Just avoid taking your turmeric and pepper dose with your drugs.

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Here is an excerpt from an excellent article from The Delano Report regarding piperine's remarkable mechanism: How piperine increases the bioavailability of many substances

That same article shows charts with lists of drugs it may boost and those it may inhibit. Keep in mind, we are not referring to normal cooking or table seasoning, but regular use of large therapeutic doses.

When using black pepper to increase the absorption of curcumin, remember that more is not always better and most importantly, and fortunately, not a large ratio of black pepper to turmeric is necessary.

Cooking reduces piperine's effect as it is rather delicate, as is exposure to air which is why freshly ground black pepper is always advised.

Why take it with oil/fat?
Curcumin is lipid and alcohol soluble, not water soluble. In water, or stomach acid, which is water based, turmeric powder creates a suspension, but is not soluble. And if it is not soluble then it is not bio-available. Taking it with a little oil enhances it solubility and absorbability. Cooking with turmeric is not a problem as normally there is some oil present. Remember that the next time you see a 'trendy' use for turmeric such as adding it to a no-fat diet smoothie or added to a coffee latte (the small amount of dairy fat will not be enough).

Why take it with food?
I contacted Dr. Doug English about this and he kindly answered. I will let him explain it best.
The GP he refers to is Golden Paste, a method he devised to optimize solubility and enhance bio-availability. You will find it in 'Use in Recipes'):

GP with food (food milk drink, potatoes, nutritious smoothies, stew, scrambled eggs, porridge, sauerkraut etc etc) is perfectly logical because this is the way digestion and metabolism works and there are many, many whole books devoted to the digestive processes and thousands of articles.

**FACT:** Digestion of foodstuffs is far better in combination. Some pure drugs like antibiotics need to be absorbed unchanged and not bonded to foods and should be given on an empty stomach, some pure drugs cause nausea and if given onto a full stomach vomiting occurs. Turmeric is not a drug, but a complex whole food. Do not confuse the pure extract curcumin with whole turmeric which has only about 5% curcumin and 95% other associated beneficial compounds designed by nature to be compatible together.

**FACT:** GP is better absorbed with food because it is a food. If you take GP off the spoon onto an empty stomach there is no other contents to dissolve and slow down the passage through the GIT (gastrointestinal tract) and it gets absorbed in one hit without any accompanying nutrients. All nutrients passage through the liver from the portal circulation and if only the turmeric compounds are there they get processed and quickly excreted just like all the other quick pills. As a male with a visible urine stream I see the urine change colour to orange almost immediately after taking, say, a Berocca B complex – guess where all the B complex just went.

With no accompanying foods to dissolve the turmeric components and slow passage through the GIT, the GP that is not absorbed into portal circulation, of which curcumin is a significant amount, is quickly flushed out of the GIT unused.

You can read my article *Turmeric - Take it Food and Why* for more details.
Please be aware that the body can only absorb up to 500mg of curcumin (in capsules) at a time with the rest simply being wasted and passed out. Taking it properly (with oil, pepper, food) will greatly increase its systemic absorbability and enhance the bioavailability.

**Ginger and Turmeric - Synergistic Effects**

Ginger and turmeric are in the same botanical family, *Zingiberaceae*. The compound gingerol in ginger is known to act as a bio-enhancer, seems to increase turmeric's absorption and works synergistically with turmeric. In fact, the gingerol in ginger and curcumin in turmeric seem to work better together than separately.

It is well to note that more than normal culinary amounts, ginger also can increase the bioavailability of certain drugs as well (antiviral, antifungal, some antibiotics and anti-cancer drugs). And like turmeric, it is also a blood thinner and may interfere with other anti-coagulants such as Warfarin.

As of this writing, there is no set ratio of ginger to turmeric with some sources suggesting half the amount of ginger to turmeric. Makes sense to me. On my Epicurean Digest site, you will find detailed information on ginger.

If you can get yourself weaned off of drugs, wouldn't it be worth trying to replace them with natural substances? It will take some diligence, monitoring blood work and a cooperative health care provider to help you. It is possible for many.
Protocol #1
The most common method to take turmeric is powdered or paste. Whichever method you chose it **MUST** be taken with

- some form of a healthy non-inflammatory fat/oil* and
- several grinds of a pepper mill
- with food (as you have just read above)
- 1/4 tsp. of *powdered* turmeric at a time (more than that will be not be absorbed and 'passed', essentially wasted. Exception: Golden Paste p. 45).

*Oils produced from the fruit of a tree such as coconut, olive or walnut, not vegetable oils from seed such as safflower, corn, rapeseed (canola), peanut, cottonseed or soy.

If for health reasons you cannot take even small amounts of pepper, then consider the turmeric paste in the recipe section.

Incorporate it in your food and be inventive! However, an easy method I use is to mix it into a tablespoon or so of real (full fat) yogurt. To this, I also add cinnamon and cayenne for both their wonderful benefits and sometimes also ginger and perhaps a drizzle of honey...and sometimes walnuts and currants. This is a good base also for your own version of muesli.

If you chose capsules, the above is equally important. Some food carrier (ie. yogurt) a healthy fat/oil source and of course freshly ground pepper.

**For general well being** and maintenance, **one to two separate doses of 1/4 tsp. of turmeric** morning and evening. In the evening, the Golden Milk is recommended as this has the added benefit of relaxing and preparing for sleep.

**For therapeutic doses**, divide your daily total dose into increments of no more than roughly 1/4 tsp. at a time **following the above protocol**. Make this your mantra: small doses and frequently is key.
Dosage
The reported dietary consumption of turmeric in Asian countries in humans is in the range of 200–1000 mg/day (1000 mg is 1 g). This is slightly lower in urban areas.

Note: Please understand that with the exception of Dr. Aggarwal's suggested protocol for cancer (Protocol #2), other than general guidelines there are NO set dosages established neither in traditional nor 'modern' medicine. Most dosage suggestions you may find on the internet for a specific disease are misleading and often the authors confuse standardised turmeric extract (95% curcumin) doses used in scientific studies with whole powdered turmeric which has roughly between 2-5% curcumin.

Each body is different and each reaction to a disease is different. What is important is to start off with a minimum dose first and slowly work up to the point where you notice improvement. That is your dose. Follow the suggestions below.

**Fresh root:** For arthritis, dosages of 8–60 g of fresh turmeric root three times daily have been recommended. For dyspepsia, 1.3–3.0 g of turmeric root is recommended.

**Powdered turmeric:** For adults the official recommendation, for maintenance and as a preventative measure, is up to roughly 1.5 g daily. This will be about one very slightly rounded half teaspoon which can be divided over three to four doses daily.

**Therapeutic doses** are considered to be 2-3 g daily although some people can tolerate more. Remember, these are guidelines and not set in stone. See cautions below. Not recommended for small children under two. For older children and those over 65, start with a low dose. There are varying opinions as to the dosage and confusion between the active ingredient curcumin dose recommendations and turmeric doses.
Keep in mind, these doses can be easily stirred into meals or a spoonful of yogurt or whatever works for you.

I can't repeat it enough: smaller doses several times a day, take it with food plus fat/oil source and use fresh ground black pepper.

**Protocol #1.1**

There are times when even therapeutic doses of whole turmeric aren't effective enough. In this case an intermediate therapy of turmeric and pure curcumin capsules may be justified. It is a matter of working out what works for you or for during particularly stubborn flair ups of pain and stiffness, such as what can happen with arthritis.

Assuming you are already taking therapeutic doses of three to four 1/4 tsp. daily (a dose every 2-3 hours): replace the last dose at night with one 500 mg. capsule of curcumin. I would suggest warm milk of your choice, a little oil such as coconut and Ceylon cinnamon and freshly ground black pepper (unless the capsule has piperine in it) to wash it down with. During the night when your body rests, curcumin can do its best.

If this doesn't bring the desired relief, then replace another 1/4 tsp. dose of turmeric mid-day with a capsule of curcumin. In this way, you are benefitting from the synergistic effect of other constituents present in whole turmeric but increasing the curcumin as well.

Once you are feeling better, then slowly reduce the turmeric to 2 or 3 doses daily, but maintain one dose of curcumin capsule for a few weeks before eliminating it as well. Observe how you feel.

I find this a good method to try first before deciding to use only pure curcumin. In
this way, you can fine tune what may very well work for you before opting for curcumin capsules.

**Curcumin capsules:** These are usually 95% pure curcumin and come in various milligrams from 450-500 to 1500. More is not better here. Curcumin **over** 500 mg at a time is **simply a waste** as explained earlier. If you must have the capsules then purchase **only the 450-500 mg**. This will be much easier to dose throughout the day and for travelling. There are, however capsules of whole turmeric available. See my comments under *Turmeric versus Curcumin.*

**Turmeric Paste:** Dr. Doug English, an Australian veterinarian developed his version of an Ayurvedic cooked paste which proved to be very effective and an easier way to treat his animal patients. Then he discovered that humans too benefit greatly from this method to take turmeric. Dr. English discovered that gently simmering the turmeric for several minutes at low heat allows the **starches** in the turmeric to absorb water which improved the **digestibility** greatly. In this way, the curcumin in turmeric becomes even more accessible to be absorbed with the oil and black pepper than just the dry powder form or cold pastes.

Another advantage of the paste is that you end up **using less turmeric** but have an even **more potent** form in which to take it because digestibility is now improved. You will find the recipe for making the paste in the recipe section.

Further, because the paste form has improved digestibility and is better absorbed, individual doses can be increased without 'wasting' the curcumin. So, if 1/4 tsp. powder or paste doesn't seem to be sufficient you can increase the **paste dose** to a rounded 1/4 tsp. or more, whereas more than 1/4 tsp. at a time of only the **powdered turmeric** risks wasting the curcumin because of poor bio-availability.

If at times the paste doesn't seem to be effective enough, try the suggestions in Protocol #1.1 above.
My Personal Tip
If you have no particular health issue, I suggest 1/4 tsp. of preferably the cooked paste form at least once daily for prophylactic measures or maintenance and a twice yearly course at the two major seasonal changes; Spring and Autumn. This course will last 3 weeks.

First Week: Increase your total daily doses by an extra dose every other day. (Example if you took one dose daily then starting on Monday, your normal 1 dose, Wednesday 2 doses, Friday 3 doses and Sunday 4 doses divided throughout the day.)

Second Week: Maintain last maximum daily dose every day all week. (Example from above: 4 doses daily).

Third Week: First three days, reduce dose by one day. Next three days, reduce again until the last day (7th day) you are back to your maintenance dose. (Example from above: Monday, Tuesday and Wednesday 3 doses. Thursday, Friday and Saturday, 2 doses. Sunday back to your usual single dose.)

Cancer - Can Turmeric Help?

"Curcumin has been shown to induce apoptosis (programmed cell death) in various cancer cell lines and animal tumor cells, and may inhibit angiogenesis (the growth of new blood vessels around cancer cells).
In rats and mice, dietary Curcumin has demonstrated preventive activity against carcinogenesis in the skin, colon, stomach, and duodenum. Curcumin blocks certain cyclosporine-resistant pathways of T-cell proliferation and thus may be a potential adjuvant immunosuppressive agent for the treatment of cancer."
Dr. James Meschino www.meschinohealth.com

As of yet no human scientific studies have been performed, however a large body of scientific research on curcumin and cancer have shown evidence of very...
promising results - in vitro. This is not to say that turmeric or curcumin has not been successful as evidenced by many successful users who have relied on curcumin either as an adjuvant in chemotherapy (often being able to have lower chemo doses) or on their own.

Cancer is highly aggressive and necessitates very high doses of curcumin which would not be possible to achieve using turmeric powder. High doses of curcumin have been shown to be safe up to 12 g daily. After which one takes a break of

Dr. Moss’ work documents the ineffectiveness of chemotherapy on most forms of cancer. However, he is fair in pointing out that there are the following exceptions: Acute lymphocytic leukemia, Hodgkin’s disease, and nonseminomatous testicular cancer. Also, a few very rare forms of cancer, including choriocarcinoma, Wilm’s tumor, and retinoblastoma. But all of these account for only 2% to 4% of all cancers occurring in the United States. This leaves some 96% to 98% of other cancers, in which chemotherapy doesn’t eliminate the disease. The vast majority of cancers, such as breast, colon, and lung cancer are barely touched by chemotherapy. However, there is another category where chemotherapy has a relatively minor effect -- The most “successful” of these is in Stage 3 ovarian cancer, where chemotherapy appears to extend life by perhaps eighteen months, and small-cell lung cancer in which chemotherapy might offer six more months.

Note: Please visit this link for more info regarding effectiveness of chemotherapy
http://www.mercola.com/article/cancer/cancer_options.htm
Dr. Ralph Moss website: http://cancerdecisions.com/

two weeks before building up again.

Although studies using Curcumin for human cancer treatment have not been performed to date, a large body of evidence from animal and experimental evidence suggests that it may very well be of benefit. For the hundreds who have been helped, there is no doubt.

The most recent and highly promising studies are from January 2016 by the team headed by Dr Baskaran, Associate Professor from the Department of Biochemistry & Molecular Biology at Pondicherry University, India.
Up till now, the mechanism by which curcumin selectively induces cell death in non-polyposis colorectal (bowel cancer) cancer cells, while sparing healthy cells remained a mystery. Dr. Baskaran documented their findings in PubMed in January 2016 and in the international journal `Molecular and cellular biochemistry`, in the March 2016 edition. Their conclusion is that the curcumin in turmeric can very well have a preventative action against colorectal cancer as well as treat it. This is a major breakthrough as colon cancer is the third most prevalent cancer worldwide...and it all has to do with 'Mismatch Repair Genes'.

In general, my personal opinion is that since conducting human trials is costly for something that cannot be patented by the pharmaceutical industry and thus securing unfathomably high profit, will never happen. The cancer industry is a tremendous money maker on all levels and yet has no convincing statistics to prove that chemo or radiation therapy really works.

However, the pharma industry need not be the only source of information or optimally improved bioavailable turmeric or curcumin supplementation for cancer, thanks to the research of such scientists and doctors such as Dr. Baskaran and his team. Nano-particle, or liposomic curcumin preparations may be on the horizon. Hopefully sooner than later.
Protocol #2
The following protocol has been developed by Dr. Bharat Aggarwal, formally of Anderson Cancer Center. Remember to take it always with a little black pepper and a fat/oil source as in Protocol #1 (unless colon cancer as explained in the text box).

Week 1: Start with small dosage of 1 g curcumin per day. If you see no side effects, take it for a week and proceed to dosage of week 2.

Week 2: Increase the dosage of curcumin to 2 g per day. Again check for any issues side effects etc. If everything looks fine, take it for a week and proceed to dosage of week 3.

Week 3: Double the dosage again to 4 g per day. Again if things look fine, continue for a week and go for final step.

Week 4-8: Double again to 8 g per day. Continue this for 5 weeks.

Dr. Aggarwal proposes that if after an 8 week course of this protocol no improvement is noted, then curcumin very likely will not help you.
**Turmeric for Animals**

Can turmeric help relieve your pet's aches and pains as well as it can help you? The resounding answer is yes, be your pet dog, cat, horse or ...even crocodile, parakeet or gold fish.

The results are short of amazing with astounding results often even quicker than for humans. As an example, in older dogs and horses with arthritic or other inflammatory pain issues nearly all pet owners notice a general ease in movement. Less pain and aches means a livelier disposition. Older animals seem more alert and to have regained some playfulness.

The list is equally long for our pets. I can personally attest that my beloved Tosca (Australian Silky Terrier), who in her high age had some hearing and eyesight loss due to cataracts and joint pain, within days was noticeably more at ease and more willing to walk. I am also convinced that turmeric helped slow down the dementia that developed. I only wish I had discovered turmeric for her years earlier. I am sure her surgeries she had for her tumours would not have been necessary, nor that her dementia would have developed at all.

She loved the turmeric paste mixed into her broth with her food and energetically lapped it up quickly.

For any and all information regarding turmeric and animals, please visit the [Turmeric Life](http://turmericlife.com.au) website (Australia). This website is Dr. Doug English's site, who is THE pioneer in using turmeric for his patients (and their owners too!). His FaceBook page Turmeric User Group, has as of this writing, nearly 195,000 followers.
Part 2

Turmeric versus Curcumin

Benefits of whole herb Turmeric

I often speak about the synergistic effect of all the constituents of whole plant vs. isolating one because it has been identified as the 'active ingredient'. Science is often guilty of tunnel vision and sometimes forgets that it is limited by the current body of knowledge and equipment at hand. So, if other constituents of a herb cannot be shown to also be 'useful' then it is considered nearly irrelevant.

This concept of an 'active ingredient' gives the impression that all the others are inactive and unnecessary.

Personally, I am not a fan of taking herbs (or spices) in such a concentrated active-ingredient-only-form. This is not what nature intended nor herbal medicine traditions which understood the importance of the synergy of the whole plant matter, be it seeds, leaf, bark or root. However, please consider organic turmeric which it may be quite helpful for therapeutic short term uses as a massive dosing therapy. 'Short term' is the key word. See cautions below.

This is taking a pharmaceutical approach and attempting to apply it to the very foundation of herbology which is certainly a holistic approach. Herbology (which traditional folk medicine is to one degree or another) recognizes certain constituents as being particularly beneficial but that all the other constituents work synergistically. Some constituents act as a buffer, others act as a carrier and still others work as 'balancing agents'.

Take all those constituents away, sell the 'active ingredient' to an uninformed public and there is a potential for problems. Like a public who think that something natural 'can't harm' and why take one when two or three must be better. Only, it isn't for many herbs.
In the past, the FDA has been all too happy to ban certain herbal preparations for health complications (read this to mean user error). It is not the fault of the herb, but of the supplement companies not fully 'getting it' and trying to mimic the pharmaceutical industry by selling 'active ingredients' instead of whole herb and quite often buyers ignoring the instructions for use.

As an example, a nutrient in turmeric called ar-turmerone is a major bioactive compound, but there are many other vitamins, minerals and nutrients in whole turmeric. ALL of them work together synergistically to provide benefits and in many cases, healing. That nutrient is not in those pure curcumin capsules, nor are all the rest of the beneficial compounds.

Isolating a complex herb to a single pharmaceutical, standardised grade of, for example, just curcumin is very limiting. The true healing power lies in the combination of all the constituents and nutrients working synergistically.

Curcumin Capsules
Although I advocate whole turmeric with at least 3% curcumin (certified) for all the reasons mentioned, curcumin only capsules may have their use for some patients, such as in cancer treatment (specifically for colon cancers) or other serious illnesses as well.

The therapy should be short term - several weeks to a few months in some cases. Depending on the result, one then reverts back to whole turmeric doses when possible or adds curcumin capsules to the turmeric doses as I mentioned earlier in Protocol #1.1.

Be aware of such terminology as 'serving size'. This often equates to 2, 3 or more capsules to equal whatever 'serving size' listed. This may not be so economical after all.
As you have already learned, 450-500 mg capsules are best as the dose can be regulated at will and easily taken throughout the day. Remember that for therapeutic purposes, neither turmeric nor curcuma is a 'once a day' convenience pill.

Remember: **smaller doses and frequently**. I cannot stress this enough.

Check the contents (ie. Curcumin extracted from Turmeric root), the purity concentration of curcumin (ie. 95%) or of whole turmeric WITH extra curcumin and check the amount *per capsule* (1000mg, 1500mg or 500mg etc.), **not** per serving.

Another point to be aware of is that some companies sell their capsules as **part curcumin and part turmeric**, but have 95% curcumin prominently on the bottle. What this essentially means is the *added curcumin* is 95% pure.

Confusing descriptions such as Turmeric Curcumin are often used but a quick look on the back shows 50-50% of each or even 75% turmeric and 25% curcumin and sold as 'enhanced formula'.

And yet other companies sell 95% pure curcumin capsules, but find it necessary to have Turmeric Curcumin on the label because most people looking for such are familiar with 'turmeric'. In a way, it is further confusing as if 'turmeric curcumin' is best. All curcuminoids come from turmeric. There is no cumin curcumin, cinnamon curcumin nor spinach curcumin.

There is *nothing wrong* with mixing whole turmeric with a percentage of curcumin as this **can be ideal** for certain patients. What *is wrong* is intentionally misleading patients to sell them something that is not exactly what they may be looking for...such as 95% curcumin and nothing else.

Be sure to check the back label. If it is pure curcumin you want, there will be no other ingredient listed in the back. Unless, of course possibly mixed with piperine to enhance the absorption.
**Heat Stabilized Curcumin**
Absorption is greatly dependent on solubility. Curcumin is virtually insoluble in water which is the core of the problem of its poor absorbability. Simmering turmeric powder in water or milk allows its starches to absorb water, thus greatly improving its digestibility which in turn, improves curcumin's absorbability enough to be significant.

"Studies have shown that **adding heat to the turmeric** (ie. simmering it in water for 7-10 minutes) increases its solubility 12 fold (remember its solubility, not absorption). The verdict is still not out on how much it impacts the absorption. But this may be the reason why taking turmeric with warm milk (golden milk!) is considered great!"
Dr. Doug English www.turmericlife.com.au

An earlier study showed that curcumin level dropped 90% in an alkaline solution within 30 minutes. Another study I found repeated the experiment and showed that the level of **heat solubilised curcumin** came down only 47% in 12 hours and 67% in 72 hours. **Heating seems to be the KEY to stabilize and protect the curcumin** from breaking down. This is another very convincing argument to make your Golden Paste (see page 45)!

Be sure to **take it with a fat or oil**, and as you already learned the reason why, freshly ground black pepper as well to really boost its effects. For those with absolutely no tolerance for even small amounts of black pepper, the paste version with just the oil may be your solution.

~

**Are There Side Effects?**
The use of turmeric as a spice for colouring, flavouring food and as a traditional folk remedy for numerous ailments has been known to be safe for centuries. As of this writing there are no studies on either animals or humans that have shown
any toxic effects associated with the use of turmeric. Even at very high doses, it is clear that turmeric is not toxic.

The U.S. Food and Drug Administration (FDA) has published a 300-page monograph on its own clinical trials with turmeric and declared turmeric as well as its isolated active constituent curcumin as GRAS (generally regarded as safe).

The monographs of the German regulatory authority, Commission E, also report that there is no known interaction of drugs with turmeric. Keep in mind that this refers to culinary use and low, maintenance levels. Turmeric at high therapeutic levels or pure curcumin doses may interact with certain drugs, either enhancing their effect or interfering with it. Please refer to the Drug and Nutrient Interaction section.

Between Myths and Facts
The internet is abound with information most of it good, much of it rubbish and often enough, full of cherry picked or over cautious half truths, which when repeated often enough (especially by 'authority sites') begins to be accepted as truth. I suspect that many of those sites are not clear that research was done mostly on curcumin and that many side effects mentioned or suspected stem from high dosed curcumin and not whole turmeric powder.

The following is typical information regarding the side effects of turmeric using WebMD as an authority site:

"Turmeric is LIKELY SAFE when taken by mouth or applied to the skin appropriately for up to 8 months."

This statement has no basis. How did they arrive at 8 months and not 7 or 10? A good example of over caution, this makes as much sense as saying 'olive oil is
likely safe...etc'. In India and elsewhere throughout Asia, turmeric is often taken DAILY.

"Turmeric is POSSIBLY SAFE when it is used as an enema or a mouthwash in the short-term."

There are no reports nor studies that demonstrate a problem with using turmeric for an enema or mouthwash. I wonder what WebMD would have to say about the ever popular coffee enemas and green tea mouthwashes.

"Turmeric usually does not cause significant side effects; however, some people can experience stomach upset, nausea, dizziness, or diarrhoea."

This is true, and is why it is always suggested to start with a low dose of 1/4 tsp. of turmeric powder or paste once a day in the beginning before slowly increasing, and to always take with food.

"In one report, a person who took very high amounts of turmeric, over 1500 mg twice daily, experienced a dangerous abnormal heart rhythm. However, it is unclear if turmeric was the actual cause of this side effect. Until more is known, avoid taking excessively large doses of turmeric."

My immediate thoughts on this one was 'oh, guilty by association with an unknown substance'. Searching one of the largest biomedical and scientific data bases PubMed, I find no hint of any 'abnormal heart rhythm' at any dose level. On the contrary, much info regarding its cardio-vascular and myocardia (heart tissue) protective properties.

"Pregnancy and breast-feeding: During pregnancy and while breast-feeding, turmeric is LIKELY SAFE when taken by mouth in amounts commonly found in food. However, turmeric is LIKELY UNSAFE when taken by mouth in medicinal amounts during pregnancy. It might promote a menstrual period or stimulate the uterus, putting the pregnancy at risk. Do not take medicinal amounts of turmeric if you are pregnant. There is not enough information to rate the safety of medicinal amounts of turmeric during breast-feeding. It is best not to use it."
Turmeric in normal culinary amounts, such as curries or Golden Milk are not a problem and in fact is beneficial to the lactating mother as it may help increase breast milk as well as benefit (through the milk) the infant. The rest of the statement is common sense. It is never wise to start something completely new - in higher or therapeutic doses - when you are pregnant. Your body is not used to it. In India, turmeric consumption is much higher than the suggested low dose of 1/4 tsp. Their birth rates clearly are not affected by turmeric.

"Gallbladder problems: Turmeric can make gallbladder problems worse. Do not use turmeric if you have gallstones or a bile duct obstruction."

This is true. Turmeric stimulates the liver to produce bile and helps strengthen gallbladder contractions that move bile. As a consequence, if you have gallstones, the contractions and extra bile may move a stone into position so as to block the bile duct. Very painful. Turmeric does not produce gallstones, by the way. These are usually due to precipitates of cholesterol.

"Bleeding problem and surgery: Taking turmeric might slow blood clotting. This might increase the risk of bruising and bleeding in people with bleeding disorders. It might cause extra bleeding during and after surgery. Stop using turmeric at least 2 weeks before a scheduled surgery."

Do you take Ibuprofen or aspirin? Turmeric is as similar an anti-platelet medium as they are. Normally, you will be advised not to take aspirin, Ibuprofen or even alcohol 48 hours before surgery. Remember that the curcumin in turmeric peaks at roughly one hour and dissipates within three hours. A greater problem is taking Vitamin E and not telling the doctor (because it's 'just' a vitamin, right?). Vitamin E must be stopped 2 weeks prior to surgery. In any case, tell your doctor you are taking turmeric and whether in your favourite curry or therapeutic doses.

"Diabetes: Curcumin, a chemical in turmeric, might decrease blood sugar in
people with diabetes. Use with caution in people with diabetes as it might make blood sugar too low."

Diabetics know that introducing any new food into their diet needs monitoring to check their blood glucose and are instructed how to do this. This is easily adjusted through insulin or food. Not checking the blood glucose is the potential danger, not the turmeric.

"A stomach disorder called gastroesophageal reflux disease (GERD): Turmeric can cause stomach upset in some people. It might make stomach problems such as GERD worse. Do not take turmeric if it worsens symptoms of GERD."

GERD is complex and affects those with it differently. GERD patients may experience a worsening of symptoms because it stimulates stomach acid during digestion. Normally a good effect especially in older patients where digestion is difficult because of low stomach acid during digestion, however, problematic with GERD. Others find some improvement, so it is a matter of trying small doses and observing. It is up to each person to test themselves to see. Start with 1/8 tsp and work up slowly to 1/4 tsp. Wait a few weeks at that dose before increasing.

"Hormone-sensitive condition such as breast cancer, uterine cancer, ovarian cancer, endometriosis, or uterine fibroids: Turmeric contains a chemical called curcumin, which might act like the hormone estrogen. In theory, turmeric might make hormone-sensitive conditions worse. However, some research shows that turmeric reduces the effects of estrogen in some hormone-sensitive cancer cells. Therefore, turmeric might have beneficial effects on hormone-sensitive conditions. Until more is known, use cautiously if you have a condition that might be made worse by exposure to hormones."

This statement is relying on outdated studies. More recent research has shown that turmeric binds to estrogen receptors but does not bind to estrogen. This contradicts older research that theorized that turmeric had the same binding action on estrogen. It may, however inhibit estrogen (specifically estradiol - one
of the three hormones that make up 'estrogen' and the more potentially problematic one under the right conditions). This is good news for those women with estrogen dominance which carries a higher risk for strokes, heart attacks, gallstones, liver dysfunction, weight gain and of course, uterine cancer, estradiol triggered breast cancer, fibroids and more. It may also protect against estrogenic household chemicals and pesticides.

"Infertility: Turmeric might lower testosterone levels and decrease sperm movement when taken by mouth by men. This might reduce fertility. Turmeric should be used cautiously by people trying to have a baby."

No one seems to know where this misconception originated. Ayurvedic medicine advises dietary turmeric to increase fertility in both men and women (animals as well, by the way) as well as the libido, by the way. It is also known to increase semen production and is an effective vaginal spermicidal (research published in 2011 in the journal Molecular Reproduction & Development).

"Iron deficiency: Taking high amounts of turmeric might prevent the absorption of iron. Turmeric should be used with caution in people with iron deficiency."

Iron deficiency is quite complex and many factors must be considered. Women are more at risk than men because of their menstrual cycle but both are equally at risk because of other factors such as certain medications, antacids, vegetarians who do not plan their meals carefully (iron from plants is more difficult to absorb than from meats) and more. Turmeric binds (chelates) to iron, but also has iron. So, the answer if turmeric in high amounts worsens existing anaemia is a highly individual one. Some have found it did indeed worsen their anaemia (taken in high amounts) and others have increased iron levels. If you have an iron problem, try turmeric but monitor your iron level after a few weeks.
Understand that I am not targeting WebMD with my criticism. I find it a valuable site for what it is - information for the non-medical reader. But it is conservative and I don't think always up to date on its info.

Who knows whether WebMD is at the root of misinformation about turmeric side effects or if they merely copy the same from other authority sites exercising exaggerated caution and theory? In any case, now you have more than just theory to base your decisions on regarding turmeric and you.

**Oxalate and Kidney Stone Concerns in Turmeric**

Turmeric contains oxalates which can contribute to the formation of calcifications that will form kidney stones. Hyperoxaluria is excessive urinary oxalates above the normal levels. This is a problem for those wishing to take turmeric for its numerous benefits.

Patients with this problem are advised by their doctors how to avoid going over the accepted limit of 40-50 mg daily of oxalate total. However, studies show that consuming calcium rich foods at the same time as a high oxalate food - such as turmeric - is a good way around this problem.

![Calcium binds to oxalate in the intestines rendering it harmless. Great news! Not so great news is that now the calcium is also useless. But this is not as serious a problem as it seems.](image)

Consider taking turmeric in a few spoons of yogurt - lots of naturally rich calcium. You will benefit from all the other good properties of both but without the oxalate and whatever amount of calcium in your yogurt that has bound to it. The remaining calcium is still available to your body. Spinach, as an example of this is not a good source of calcium because it too has oxalates to which it binds, leaving, if you are lucky roughly 10% of free calcium.
The total amount of oxalates in the amount of turmeric taken per dose compared to what is taken in through vegetables and a common drink like tea, is small.

A 2008 paper by the AJCN (American Journal of Clinical Nutrition) concluded that dietary supplementation with turmeric could increase the risk of kidney stones. However, another study in 2009 demonstrated that curcumin had relatively low oxalate and posed very low to no risk of kidney stones:

"The published paper (2008 AJCN) does not cover research on standardized extracts of curcuminoids from turmeric. It only refers to the raw spice that contains numerous other natural compounds, in addition to the curcuminoids"
"....we did not anticipate to find significant amounts of oxalic acid in standardized extract. Actual experimentation confirmed this presumption."

My personal stance will always be for whole plant matter and not isolated constituents. However, for those rare exceptions such as kidney stones but still needing to benefit from curcumin, SHORT term use is a consideration. Those with kidney stones are surely educated in the importance of a calcium rich diet. Remember that calcium binds to oxalates in the intestine, not the stomach. See this link to the Cleveland Clinic article, Kidney Stones: Oxalate-Controlled Diet.

If you tend towards kidney stones, consider to chose to take either curcumin extract (which will have low oxalates - but I don't really recommend this as you will be missing out on all the other constituents in turmeric) or enjoy your turmeric with a calcium rich food such as with a dollop of yogurt. And of course, talk this over with your health practitioner.
**Use in Recipes**

I really don't see the point of a huge listing of recipes that use turmeric because no special recipe is needed! Just look for ways to add it to your normal (healthy) food. Just add roughly 1/4 tsp. per serving taken according to Protocol #1 and that will be good enough. Mixed in with foods, you will hardly notice it...except for the added golden yellow colour.

Add it in soups, stews, smoothies, juices, yogurt, scrambled eggs (stir it into a tablespoon of water per 2-3 eggs first, then lightly beat with a fork - water rather than milk produces a fluffy scramble. Oddly, using milk, the water may separate out producing a tougher but watery scramble).

Try it in marinades, use it as a condiment, salad dressings, tuna fish or egg salads, rice dishes, pasta, mashed potatoes, any grain or seed dish such as millet or quinoa. Beet salad (see recipe on my website), potato and vegetable salads, too.

Recently when I made my broccoli and cauliflower patties, I remembered to add my turmeric paste. Not noticeable, except for the colour. It is undetectable in tomato based pasta sauces...except that the pasta may have a slight golden colour to it! Experiment with your own recipes!

The following is the original recipe for the excellent turmeric paste developed by Dr. Doug English mentioned earlier in this guide. I cannot encourage you enough to get used to making up your paste every few weeks (larger batches can be frozen).

I can't help but be a little amazed when I read about people's experiences with the paste. Often enough is someone who notices a significant improvement using the paste over having used the powder.

You will get more 'bang' out of your turmeric by making up the paste. Make up a batch - it takes but minutes and will last about 2 weeks in the refrigerator. For my purposes, I often freeze half as I sometimes do not use up a batch within the two weeks.
Turmeric Paste aka. Golden Paste - the Key
You've already read about the importance of heat stabilised turmeric (page 37) and how it affects solubility and therefore improving its absorbability.

Turmeric paste has been used in Ayurvedic medicine since thousands of years. The original recipe was only water and turmeric cooked together. However, Dr. Doug English has developed a far more effective version incorporating oil/fat and freshly ground pepper - for all the reasons you have already read. The following is his version and is the key for benefitting from turmeric optimally.

Be aware that turmeric will stain everything and it may splatter as you stir and heat it, although I have never had that problem. I use a small, deep soup pot rather than a shallow pan as this seems to keep any splatters during stirring from escaping...and use an apron!

Make sure that you use whole turmeric powder that has not had its curcumin removed.

Because cooking makes the curcumin in turmeric more bio-available 1/4 tsp of the paste is considered a basic dose, but unlike the powdered form it can be increased to double that without fear of wasting it (see Protocol 1, p. 24).

Still, the rule stands: never the full daily dose at once, but divided throughout the day.

Sterilize an appropriate size glass jar with lid and set aside. Do not use bleach.

1/2 cup (60g) turmeric powder
1 cup water (250 ml) PLUS 1 cup water in reserve, if needed
1/3 cup (70 ml) cold pressed olive or coconut oil
(You may use any non-inflammatory oil for this - no vegetable oil.)
2-3 teaspoons freshly ground black pepper (approx. 4-6g)

Place the turmeric and water in a small, deep pot and bring to the boil, stirring
frequently. Reduce heat and simmer for about 7-10 minutes. It is not necessary that it bubbles away madly - a simmer is sufficient. Add a little more water if the paste is so thick that when you stir it, it moves in a lump. It should be about the consistency of a thick yogurt.

Remove from heat and add the oil, stirring well. I add the freshly ground black pepper when it is no longer so hot. (If you absolutely cannot take pepper, leave it out but be aware the positive effects of turmeric paste may take longer to notice.)

Fill your prepared jar and store in the refrigerator for up to 2 weeks. Freeze larger batches.

Since ginger is a bio-enhancer, consider adding a little paste to your ginger tea. Or add fresh or powdered into your recipes (especially soups!).

Not into making your own paste, or you need an easy way to take your turmeric dose while travelling? Check out the Resources section at the end of this ebook.

Here are just a few recipes to get you started with your powder or paste:

**Basic Golden Milk Drink**

1/4 tsp. turmeric powder or paste*

a good grating or two of black pepper corns

1/2 tsp. coconut oil (or other favourite oil from a fruit, such as olive or avocado)

125 ml. (+- 1/2 cup) water

125 ml. (+- 1/2 cup) milk of your choice (I use oat milk)

sweetener of choice (maple syrup, honey, even cinnamon is often sweet enough for me)

In a small pan, stir the turmeric in the oil to dissolve then add the water. Heat and allow to simmer gently a few minutes until it thickens slightly. This can be
between 5 to 8 minutes. Add the milk and allow to heat through without boiling. Remove from heat and add the sweetener. Finished is your delicious health elixir.

As you get used to it, you can increase the turmeric to 1/2 teaspoon with no need to increase the oil. It will be sufficient.

Optional: Add a few shakes of Ceylon cinnamon, crushed cardamom seeds or both with the turmeric.

*If you use the paste, just heat the water and milk, remove from heat and stir in the paste. The paste has the oil and black pepper already. If you like the addition of spices such as cinnamon or ginger, add them as the water and milk is heating.

**Muesli with Turmeric and ‘Friends’**

My favourite breakfast. This is my version of a classic Müsli (muesli). Quick and easy...great way to hide the turmeric for those who don’t appreciate the taste.

Per person:
Full fat yogurt – 2 tablespoons  
(Yes, turmeric – and you – need the fat to make it more bio-available)
1/4 teaspoon of turmeric powder or paste
1 level tablespoon of oatmeal (or chia seeds or mix of both)
the ‘friends:
  a few grinds of black pepper (not mixed...black)
  1/8 to 1/4 teaspoon of cayenne
  1/8 or more of Ceylon cinnamon
the toppings:
  1/4 apple, coarsely grated
  walnuts, I always add a few crumbled
  banana slices (or any dried fruit such as blueberries, currants etc)
optional but VERY nice: a squeeze of lemon
You will notice I have not included any sugar or sweetener. Sugar of any kind, honey, maple, cane etc are all inflammatory. Doesn't make sense to add known inflammatories to turmeric, a known anti-inflammatory, does it? For me, the Ceylon cinnamon and apple or banana are sweet enough.

First wet the oatmeal with a little hot water while you get everything else ready. It will soften up while you assemble the rest.

Plop the yogurt in a bowl, add the turmeric and ‘friends’ to one side, grated apple next to it, then the softened oatmeal, add the broken up walnuts and banana (or whatever else you fancy). Stir around...enjoy!

You won’t notice the turmeric, and a little zing of the cayenne comes pleasantly through but is cooled by the full fat yogurt.

Why the cayenne? It is excellent for your circulation (a vasodilator) and good for the those with elevated blood pressure. Cinnamon for the blood sugar levels (diabetic or not) and more. And its great taste!

**Spicy Tomato Cheese Spread**

Did you know that the lycopene content is much higher and more bio-available in cooked tomatoes - such as tomato paste? You can read the abstract behind it at that link. Protect your eyes and skin by eating more of it...which is why I developed this recipe. It's a great way to get a tasty and healthy concentration of lycopene. This recipe is roughly for 4 servings.

2 tablespoons of your favourite fresh cheese (feta, for example)
1 tablespoon double or triple concentrate tomato paste
1 teaspoon turmeric powder or paste
a few grinds of black pepper (unless it is in the paste)
a little olive oil
optional: 1/4 teaspoon cayenne, a little cumin, salt to taste if necessary
Place broken up cheese on a plate and begin to soften and mash with a fork. Add the rest of the ingredients and continue to mash to the consistency you like. You may have to add a little more oil for this.

I often have this in the morning as a spread for my crisp bread or a slice of toasted rye. It's a great celery filler as well.

**In Closing**

Why hasn't the pharma industry tried to patent turmeric or curcumin? They did, and it backfired. When they tried to register patents, it was their very own evidence that they submitted that worked against them. The volume of scientific and medical evidence, its long healing history and its use medicinally for centuries proved to the United States Patent and Trademark Office that the patent claims were not new nor unique and the rights were revoked for their Turmeric patent 5401504 application.

"USPTO unequivocally rejected all six claims made on August 13, 2001 ruling that Turmeric's medicinal properties were not patentable." University of Texas MD Anderson Cancer Center states "in the case of Curcumin, a natural compound, no company can reap the benefits if Turmeric shows itself to be an effective anti-cancer drug." Their loss and your gain.

Until the next time, be well!

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Selection of Resources
Please understand that the turmeric suppliers here mentioned do not exclude other good resources and that I have no affiliation with them. The ones listed here are highly recommended by users or from my personal experience.

USA/Canada: For turmeric paste kits, turmeric bars Tu*Go by Dr. Doug English and top quality turmeric powder and other spices, check out New Naturals (not an affiliate link). Contact Helene there for all your spice needs.

UK/Europe: For turmeric paste kits, high curcumin levels up to 5% and powder, turmeric bars Tu*Go by Dr. Doug English visit The Golden Paste Company.

Australia: Turmeric Life is Dr. Doug English's site for his turmeric bars Tu*Go, for bulk Sri Lankan organic turmeric with 4-5% curcumin visit The Goodness Company, and for organic Australian grown turmeric check out Turmeric Australia.

Conversion calculator:
For your convenience: Convert milligram (mg) to gram (g)
http://www.convertunits.com/from/mg/to/g

Veterinary medicine:
THE pioneer in turmeric for animal health and treatment - Dr. Doug English, Veterinary Medicine, clinic in Queensland, Australia. Currently doing his own further research on turmeric for animal and human use.
http://www.turmericlife.com.au/ He has a huge following on Facebook. Look
for Turmeric User Group with over 194,000 followers and counting. It is a wonderful group of friendly and helpful people.


It would be impossible to list all the resources I have come across over the years and more recently to create this ebook. The following are very good and representative resources that have served to, in part at least, influence my personal research.

Some of those represent improvements upon flawed, much earlier research from the mid 80's. Material I have relied on most are the most recent or recently updated from roughly the last 5 years.

For those interested, I can send you a pdf of references mostly from scientific and medical research and many from journals and other sources, some of which I have used or collected. They are from the end of the 80's to 2014. It has nearly 90 pages. Yes. That is not a typo ;-). It is by no means conclusive. There are thousands of scientific publications on turmeric and curcumin.

- PU Professor and Team Find Turmeric Can Prevent, Cure Colorectal Cancer
- GADD45α modulates curcumin sensitivity through c-Abl- and JNK-dependent signalling pathways in a mismatch repair-dependent manner
  Molecular and Cellular Biochemistry 414(1-2) · January 2016
- Evaluation of Efficacy of Curcumin as an Add-on therapy in Patients of Bronchial Asthma
  Afroz Abidi, Surabhi Gupta, Manu Agarwal, H.L. Bhalla, Mahip Saluja
  http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4190737/
The Role of Curcumin Administration in Patients with Major Depressive Disorder: Mini Meta-Analysis of Clinical Trials Phytother Res. 2015 Nov 27. Epub 2015 Nov 27. PMID: 26610378


CAMP https://en.wikipedia.org/wiki/Cathelicidin

Improving the Solubility and Pharmacological Efficacy of Curcumin by Heat Treatment Biji T Kurien Anil Singh Hiroyuki Matsumoto https://www.researchgate.net/publication/6073888_Improving_the_Solubility_and_Pharmacological_Efficacy_of_Curcumin_by_Heat_Treatment


Curcumin Inhibits Prostate Cancer Bone Metastasis Journal of Cancer Therapy April 2014 A number of studies have focused on the beneficial properties of Curcumin (diferuloyl methane, used in South Asian cuisine and traditional medicine) such as the chemoprevention of cancer. Recent studies have also indicated that this material has significant benefits for the
treatment of cancer and is currently undergoing several clinical trials.

- Patent for "Use of turmeric in wound healing"
  https://www.google.com/patents/US5401504

- Turmeric toxicity in A431 epidermoid cancer cells associates with autophagy degradation of anti-apoptotic and anti-autophagic p53 mutant.


- Verma SP, Salamone E, Goldin B. Curcumin and genistein, plant natural products, show synergistic inhibitory effects on the growth of human breast cancer MCF-7 cells induced by estrogenic pesticides. Biochemical and Biophysical Research Communications 1997;233(3):692-6

- Anti-inflammatory properties of curcumin, a major constituent of Curcuma longa: a review of preclinical and clinical research. Jurenka JS


- A randomized, pilot study to assess the efficacy and safety of curcumin in patients with active rheumatoid arthritis. Chandran B¹, Goel A.

- Curcumin, inflammation, ageing and age-related diseases E Sikora, Giovanni Scapagnini Mario Barbagallo
  http://www.immunityageing.com/content/7/1/1

- News and Events.” University Cancer Centre Begins Curcumin Trial â€” University of Leicester. Web. 14 May 2012.
http://www2.le.ac.uk/news/blog/2012/may/university-cancer-centre-begins-curcumin-trial


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