**Did you know**

**Nutrition**

33% of avoidable cancers are related to diet and obesity! 33% are related to tobacco use!

A diet rich in vegetables, fruits and other plant foods has been shown to reduce cancer risk!

Foods rich in phytoestrogens (eg, soy, Flax), cruciferous vegetables, garlic, onion, turmeric, Ginger, Asian mushrooms (cooked), green tea, omega-3 fatty acids and vitamin D have been shown to reduce cancer risk!

Evidence shows that low vitamin D is associated with an increased risk of certain malignancies including breast, prostate, colon and pancreas as well as diabetes!

60% of United States adult population have insufficient vitamin D (<25 ng/ml)!

Vitamin D deficiency up regulates the renin-angiotensin-aldosterone system which can cause hypertrophy of smooth muscle, cardiac muscle hypertrophy, hypertension, insulin resistance and diabetes mellitus!

**Alternative Medicine**

33% individuals use some form of alternative medical therapy!

FDA has no role in approving new supplements for marketing and has no requirements for purity or manufacturing standards and no review of claims of efficacy!

California study (Ko, 1998); 33% of supplements had undeclared ingredients, 10% contained lead, 15% had arsenic or mercury. Many products also contained undeclared pharmaceuticals (eg, ephedrine, chlorphentermine, methyltestosterone, phenacetin)!

A Norwegian study in 2010 showed 66% of traditional herbal preparations in Dutch marketplace were contaminated with mercury, arsenic or lead!

NHANES (National Health and Nutrition Examination Survey) in 2009 found individuals taking supplements have 20% higher blood lead levels than in persons not taking supplements, this was associated with 2X higher risk of chronic kidney disease!

Arsenic - main exposure is dietary from supplements, herbal products, fruit juice, water and rice. There is no federal limit for arsenic in food.

US Pharmacopeial Convention (USP) examines manufacturing to ensure companies adhere to good manufacturing practice regulations of the FDA. USP does not address direct toxicity or drug interactions, but offers some assurances that USP approved supplements may be safer with lower levels of heavy metals and contamination!

**Diet**

Average American consumes 62 lbs/yr of high fructose corn syrup (mostly in soda)!

NHANES showed 2 sugary drinks daily (soda, coffee, tea, lemonade, ice tea) increased risk of chronic kidney disease 2X (no association with diet drinks)!

1 soda daily is roughly equal to an 8 pound weight gain in 1 year!

**Obesity**

40% of the US population is expected to be obese by 2025 and 33% have diabetes by 2050!

Obesity is associated with nonalcoholic fatty liver disease (NAFLD)!

NASH (nonalcoholic steatohepatitis) due to NAFLD leads to liver cirrhosis and increased risk of liver cancer!

NAFLD is the most common cause of elevated liver enzymes in United States!

**Thyroid**

Vitamin B deficiency, Vitamin D deficiency, iron deficiency, high calcium, diabetes and celiac disease can mimic symptoms of hypothyroidism.

Generic thyroid hormone can vary by up to 20-30% from name-brand drug.