References 2

Links: Abstracts, Articles, etc.

These links should work as of 2014; sometimes you have to click on them several times; if they don’t work, then Google/search the titles

Collagen, AA Transport, Thyroid/Cholinergic, Tyrosine, Tyramine, Theophylline, MOA’s, Glutamate, NMDA, TKI’s, PL-C, Mg, Lemon Balm/Theanine, mitochondria, BCAA’s, peroxidases, adenosine, tendon ruptures due to endocrinopathies, FQ’s, TOPO’s, Other

http://link.springer.com/article/10.1007%2FBF00965468#page-1  Mechanism of action of collagenase on the permeability of the blood-brain barrier

http://en.wikipedia.org/wiki/Collagenase  Collagenase

http://en.wikipedia.org/wiki/MMP1  MMP1 Collagenase

http://en.wikipedia.org/wiki/Matrix_metalloproteinase  Matrix metalloproteinase


Collagen receptor

The Discoidin Domain Receptor Tyrosine Kinases Are Activated by Collagen

"The discoidin domain receptors (DDRs) are receptor tyrosine kinases that recognize collagens as their ligands"

Bidirectional binding property of high glycine-tyrosine keratin-associated protein contributes to the mechanical strength and shape of hair.

Characterization of In Vivo Keratin 19 Phosphorylation on Tyrosine-391

Drug-related nail disease (TKI's)

Thyroid dysfunctions induced by tyrosine kinase inhibitors

Human diabetes associated with a deletion of the tyrosine kinase domain of the insulin receptor

Disorders of catecholamine, tyrosine, cysteine metabolism

Identification of a membrane protein, LAT-2, that Co-expresses with 4F2 heavy chain, an L-type amino acid transport activity with broad specificity for small and large zwitterionic amino acids (and bulky analogs)

The 4F2hc surface antigen is necessary for expression of system L-like neutral amino acid-transport activity in C6-BU-1 rat glioma cells: evidence from expression studies in Xenopus laevis oocytes.

Non-neuronal cholinergic system in human bladder urothelium.

Vitamin D3 restores altered cholinergic and insulin receptor expression in the cerebral cortex and muscarinic M3 receptor expression in pancreatic islets of streptozotocin induced diabetic rats.
Presence and influence of cholinergic nerves in the human thyroid. (Cholinergic innervations effect was blocked by atropine, a muscarinic receptor antagonist)

Cholinergic nerves in the thyroid gland. “The present results suggest that the endocrine activity of the thyroid gland is also under the control of the autonomic nervous system.”

Effects of acetylcholine, TSH and other stimulators on intracellular calcium concentration in dog thyroid cells.

Acetylcholinesterase: Mechanism of Catalysis and Inhibition

Effects of estrogen on acetylcholine release in frontal cortex of female rats: involvement of serotonergic neuronal systems

Thyroid storm precipitated by organophosphate intoxication (Organophosphate (OP) pesticides inhibit the function of acetylcholinesterase and cause an excess of acetylcholine in synapses and neuromuscular junctions, resulting in muscarinic and nicotinic effects; both could cause secretion by the thyroid gland)

The M3 muscarinic receptor mediates acetylcholine-induced cortisol secretion from bovine adrenocortical zona fasciculata/reticularis cells

Me, Bush and Graves’ Disease (good article describes the emotional roller coaster of having Grave’s antibodies; note tall thin phenotype, energetic type person with nervous energy; note onset of author’s “Grave’s” was “flu like with sore throat – SAT with transient thyrotoxicosis → eventual hypo, which might have also been transient, [although she had TED which thankfully went away])

Identification of Phosphotyrosine-Containing Proteins in Untransformed and Rous Sarcoma Virus-Transformed Chicken Embryo Fibroblasts

Conservation of structure and function among tyrosine recombinases: homology-based modeling of the lambda integrase core-binding domain

Effect of theophylline on the transport of tyrosine in cultured B-16 mouse melanoma cells. “These results suggested that biosynthesis of macromolecules, probably acting as System L transporter, was induced by theophylline treatment.”


http://www.sciencedirect.com/science/article/pii/0304416574903043 The effects of theophylline and certain other purine derivatives on tyrosine aminotransferase activity in hepatoma cells in culture

http://cancerres.aacrjournals.org/content/31/11/1580.full.pdf Induction of Tyrosine Aminotransferase and Amino Acid Transport in Morris Hepatomas and in Adult and Neonatal Rat Liver

http://books.google.com/books?id=ROW1ErpsQpkC&pg=PA1244&lpg=PA1244&dq=tyrosine+theophylline&source=bl&ots=oCMLf3Y2ss&sig=L6-D0oeO21CY4V7rh6gwL6MzA0&hl=en&sa=X&ei=PhsfVOKWHsSgyASSnoDABA&ved=0CB0Q6AEwADgK#v=onepage&q=tyrosine%20theophylline&f=false Methylxanthine and Tyrosine binding

https://sciencescape.org/paper/6137488 Possible involvement of cGMP in the control of tyrosine aminotransferase degradation in rat hepatocytes


http://www.ncbi.nlm.nih.gov/pubmed/12887140 Effects of tyrosine, phentermine, caffeine D-amphetamine, and placebo on cognitive and motor performance deficits during sleep deprivation


http://www.ncbi.nlm.nih.gov/pubmed/20578900 Drugs affecting thyroid function

gbarbesino@partners.org

http://www.ncbi.nlm.nih.gov/pubmed/8154511 Effects of commonly prescribed nonsteroidal anti-inflammatory drugs on thyroid hormone measurements

http://www.ncbi.nlm.nih.gov/pubmed/8579720 Autoantibodies to glutamic acid decarboxylase in patients with autoimmune thyroid disease: relation to competitive insulin autoantibodies. “These data demonstrate that GAD antibodies in sera of AITD patients are of low titer but significantly elevated compared to healthy controls . . .”

http://link.springer.com/article/10.1007/BF00784721 Changes in thyroid function produced by glutamic acid under normal and anoxic conditions

http://www.thyroidmanager.org/wp-content/uploads/2011/06/5-1.jpg Pathways of Thyroid Hormone Metabolism
Autoimmunity against Thyroid Hormones (Yes – I really wish this would be tested for and researched more)

Autoantibodies Against Thyroid Hormones or Lodothyronine: Implications in Diagnosis, Thyroid Function, Treatment, and Pathogenesis (same as above)

Thyroid hormone autoantibodies (THAA) in two cases of Graves' disease: effects of antithyroid drugs, prednisolone, and subtotal thyroidectomy “These results indicate that methimazole treatment could induce and/or enhance the production of THAA and THAA

References 2 website: JMR, http://fluoroquinolonethyroid.com
are antibodies against thyroid hormone-containing Tg molecule” (what about other inhibitors, like possible FQ’s?)

http://www.unboundmedicine.com/medline/citation/10698290/Effect_of_thyroid_hormone_on_the_myosin_heavy_chain_isoforms_in_slow_and_fast_muscles_of_the_rat_  Effect of thyroid hormone on the myosin heavy chain isoforms in slow and fast muscles of the rat

http://www1.montpellier.inra.fr/umr-dcc/travaux_GB.htm  Molecular basis of the triiodothyronine myogenic influence, IDENTIFICATION AND PHYSIOLOGICAL IMPORTANCE OF THE DIRECT T3 MITOCHONDRIAL PATHWAY

http://www.ncbi.nlm.nih.gov/pubmed/22452346  Mitochondrial F(0) F(1)-ATP synthase is a molecular target of 3-iodothyronamine, an endogenous metabolite of thyroid hormone.

http://www.ncbi.nlm.nih.gov/pubmed/3417847  Drug and fatty acid effects on serum thyroid hormone binding.

http://www.ncbi.nlm.nih.gov/pubmed/8256209  Thyroid-stimulating hormone activates phospholipase C in normal and neoplastic thyroid tissue

http://abstracts.iovs.org/cgi/content/abstract/46/5/4408  Tyrosine Kinases and Tyrosine Phosphatases in Lacrimal Gland Intracellular Signaling


http://www.fasebj.org/cgi/content/meeting_abstract/20/5/A1287-b  Protein kinase C and calcium activate p42/p44 MAPK in lacrimal gland using non-receptor tyrosine kinases


http://www.ncbi.nlm.nih.gov/pubmed/17214887  Expression of the Na+/I- symporter (NIS) is markedly decreased or absent in gastric cancer and intestinal metaplastic mucosa of Barrett esophagus

http://www.nature.com/nsmb/journal/v19/n12/full/nsmb.2423.html  Structural basis for recognition of 5′-phosphotyrosine adducts by Tdp2

http://www.nature.com/nsmb/journal/v19/n12/fig_tab/nsmb.2455_F1.html  Figure 1: Model for Tdp2-dependent repair of Top2-induced DNA DSBs


Expression of mitochondrial branched-chain aminotransferase and α-keto-acid dehydrogenase in rat brain: implications for neurotransmitter metabolism

LRT, a tendon-specific leucine-rich repeat protein, promotes muscle-tendon targeting through its interaction with Robo

Maple Syrup Urine Disease

Clinically Significant Drug Interaction with the Cytochrome P450 Enzyme System

Thyroid, Hypothyroid, Or Hormone Imbalance Cause Cholinergic Urticaria Hives?

Thyroid Function, Iodide Therapy

The Iodine-Dopamine-Parkinson’s Disease connection

Topical application of povidone-iodine before wound closure is associated with significant increase in serum iodine level

Intracellular iodinated compounds affect sodium iodide symporter expression through TSH-mediated signaling pathways

Thyroid hormone deiodinases--a selenoenzyme family acting as gate keepers to thyroid hormone action

Lactoperoxidase: structural insights into the function, ligand binding and inhibition (LPO and MPO as antigenic targets for TPO?)

Use of bovine myeloperoxidase as an indicator of mastitis in dairy cattle (MPO is in dairy products)

Active site structure and catalytic mechanisms of human peroxidases

Molecular evolution of the myeloperoxidase family
Human myeloperoxidase and thyroid peroxidase, two enzymes with separate and distinct physiological functions, are evolutionarily related members of the same gene family.

When Hashimoto’s is misdiagnosed as bipolar disorder: A patient’s story

Phospholipase C. “Receptors that activate this pathway are mainly G protein-coupled receptors coupled to the Gaq subunit, including: 5-HT2 serotonergic receptors, α1 (Alpha-1) adrenergic receptors, Calcitonin receptors, H1 histamine receptors, Metabotropic glutamate receptors, Group I, M1, M3, and M5 muscarinic receptors, Thyroid-Releasing Hormone receptor in anterior pituitary gland.”

Glycogen Storage Disease (enzyme deficiencies)

Hypertensive Crisis and Cheese

Monoamine oxidase

Monoamine oxidase inhibitor

Tryptamine

Inhibitory effect of trans-N-p-coumaroyl tryamine from the twigs of Celtis chinensis on the acetylcholinesterase

Tyramine Info

Tyramine sensitivity stories

Tyramine tests in foods (need a serum/platelets tyramine test, but I could not find a single lab anywhere in the US that tests for this in patients)

Adrenergic storm (MAOi’s, Tyramine) “...but as there are no serotonin receptors in the heart or blood vessels there are no direct effects on the heart. Thus, the presence of arrythmia, abnormal echocardiograms, or chest pain indicates an adrenergic crisis and rules out serotonin syndrome).

Hypertensive Crisis and Cheese

KEGG Pathway Tyrosine Metabolism
Monoamine Oxidase A Mediates Iodotyrosine Formation Induced by Monoamines in Bovine Thyroid Particulate Fraction  “Monoamines are able to increase the thyroid iodine organification in vitro”  (consider genetic abnormality in MOA’s and tyramine issues as underlying Hashi’s)

Distinct roles of bulbar muscarinic and nicotinic receptors in olfactory discrimination learning  (Dry sinuses, phantom smells a part of some FQ victims, suspect cholinergic component)

Involvement of the olfactory system in learning and memory: a close correlation between the olfactory deficit and the course of Alzheimer’s disease?

Profound Olfactory Dysfunction in Myasthenia Gravis

Relief of fibromyalgia symptoms following discontinuation of dietary excitotoxins

Glutamate flavoring

Glutamate receptor

Histological changes in the thyroid gland induced by monosodium glutamate in mice

Thyroid hormone increases astrocytic glutamate uptake and protects astrocytes and neurons against glutamate toxicity

Anti-glutamate receptor ε2 antibodies in psychiatric patients with anti-thyroid autoantibodies – A prevalence study in Japan (antibodies to glutamic acid = gluten, thyroid studies and pt stories show that gluten sensitivities in thyroid AITD; 60% or more flox victims sensitive to glutamate foods as well)

Does celiac disease trigger autoimmune thyroiditis?

Tissue transglutaminase antibodies in individuals with celiac disease bind to thyroid follicles and extracellular matrix and may contribute to thyroid dysfunction

Receptor activated exclusively by glutamate discovered on tongue  (When I had my “Kombu” crisis, the question of was it iodine or glutamate or both occurred, and the severe electrical rxn in my head, face, and tongue)

Do Eden Beans Have Too Much Iodine?

Glutamic Acid - It Is Not MSG or Monosodium Glutamate
Glutamate receptor antagonists protect from virus-induced neural degeneration

Feline immunodeficiency virus causes increased glutamate levels and neuronal loss in brain

Replication Rate of Feline Immunodeficiency Virus in Astrocytes Is Envelope Dependent: Implications for Glutamate Uptake

How Vaccines Can Damage Your Brain: Vaccines, Depression and Neurodegeneration After Age 50: Another Reason to Avoid the Recommended Vaccines (glutamate, depression, inflammation)

Causes of ALS “There is evidence of increased glutamate in ALS patients and in ALS mice and this in turn may be responsible for nerve cell death. The increased glutamate may result from either abnormal transport of glutamate out of the nerve cell environment or increased release of glutamate from nerve cells. To date, there is some evidence that the transporter responsible for removing glutamate from the nervous system may be altered and/or the process for making the transport protein damaged”.

The effects of estrogen and progesterone on blood glutamate levels: evidence from changes of blood glutamate levels during the menstrual cycle in women

Estrogen protects primary cortical neurons from glutamate toxicity

Estrogen receptors stimulate brain region specific metabotropic glutamate receptors to rapidly initiate signal transduction pathways

Skeletal muscle glutamate metabolism in health and disease: state of the art

Glutamate signaling in chondrocytes and the potential involvement of NMDA receptors in cell proliferation and inflammatory gene expression

Abolition of chondral mineralization by group III metabotropic glutamate receptors expressed in rodent cartilage

Increase in excitatory amino acid concentration and transporters expression in osteoarthritic knees of anterior cruciate ligament transected rabbits

Glutamate is elevated in pathologic posterior tibial tendons of patients with posterior tibial tendon dysfunction

References 2  
website: JMR,  
http://fluoroquinolonethyroid.com
FUNCTIONAL IONOTROPIC GLUTAMATE RECEPTORS IN HUMAN FIBROBLAST-LIKE SYNOVIOCYTES MODULATE IL-6 AND MMP-2 EXPRESSION

AMPAlkaine glutamate receptors contribute to inflammation, degeneration and pain related behaviour in inflammatory stages of arthritis.

NMDA receptor antagonist

Glutamate antagonists: Deadly liaisons with cancer

Glutamate Antagonists, Steroids, and Antioxidants as Therapeutic Options for Hearing Loss and Tinnitus and the Use of an Inner Ear Drug Delivery System

Magnesium, a drug of diverse use

Magnesium in drug dependences

Lemon Balm and Theanine: Quick Relief from Anxiety and Stress Without Tranquilizer Drugs

Lemon Balm and Theanine: Natural Stress and Anxiety Relief

Neuroprotective effects of theanine and its preventive effects on cognitive dysfunction.

The neuropharmacology of L-theanine (N-ethyl-L-glutamine): a possible neuroprotective and cognitive enhancing agent.

Sialidosis

Comparative enzymology, biochemistry and pathophysiology of human exo-alpha-sialidases (neuraminidases).

Mitochondrial Inheritance and Genetics

Circulating Metabolite Predictors of Glycemia in Middle-Aged Men and Women

Why Can Insulin Resistance Be a Natural Consequence of Thyroid Dysfunction?
Thyroid Function Is Intrinsically Linked to Insulin Sensitivity and Endothelium-Dependent Vasodilation in Healthy Euthyroid Subjects

A Twin Approach to Unraveling Epigenetics (good paper)

Porphyria (note list of drugs which can cause or exacerbate this)

Tests for Porphyria diagnosis

Phosphodiesterase

The influence of a local injection of cortisol on the mechanical properties of tendons and ligaments and the indirect effect on skin

Long term local cortisol treatment of tendons and the indirect effect on skin. An experimental study in rats

Spontaneous rupture of Achilles tendon and Cushing's disease. Case report

Spontaneous rupture of Achilles tendon: missed presentation of Cushing's syndrome

Successive ruptures of patellar and Achilles tendons. Anabolic steroids in competitive sports.

Spontaneous rupture of the anterior cruciate ligament after anabolic steroids

Spontaneous rupture of the extensor pollicis longus tendon after anabolic steroids

Pathological rupture of the distal biceps tendon after long-term androgen substitution.

Could Low Total and Free Testosterone Levels be risk factor for Achilles Tendon Ruptures in Males

Effect of estrogen on tendon collagen synthesis, tendon structural characteristics, and biomechanical

Effect of administration of oral contraceptives in vivo on collagen synthesis in tendon and muscle connective tissue in young women
ESTROGEN FLUCTUATIONS IN FEMALES INFLUENCE THE MECHANICAL BEHAVIOUR OF THE HUMAN ACHILLES TENDON IN VIVO

Female Athletes with Higher Estrogen Levels May Have Higher Injury Risk

When Steroids Cause Psychosis: Medical management of this side effect is complicated in rheumatology patients. “Doses necessary to control disease are frequently high (e.g., 1 mg/kg or greater), and therapy may be maintained for prolonged periods of weeks to months. In this setting, one out of every two to three patients (that’s 33-50%!!!) prescribed steroids may develop psychiatric symptoms including psychosis, mania, delirium, and depression. The most common symptoms reported with corticosteroid therapy are hypomania, mania, and psychosis.”

Adenosine receptors: therapeutic aspects for inflammatory and immune diseases

Adenosine receptors as targets for future drugs — what are the challenges?

Thyroid hormones modulate both adenosine transport and adenosine A1 receptors in rat brain

Natural Health Products as Modulators of Adenosine and ATP Metabolism for Cardiovascular Protection

Limonene, a natural cyclic terpene, is an agonistic ligand for adenosine A(2A) receptors

Adenosine reuptake inhibitor

Quinolones

FQ’s, TOPO’s

Quinolones
References 2

http://www.nytimes.com/2014/11/14/world/asia/tainted-drugs-suspected-in-india-sterilization-deaths.html?smid=fb-share&_r=2  Post-Mortems of Victims Point to Tainted Medication in India Sterilization Deaths “ . . . investigation has focused on the two packets of pills sent home with each patient after surgery, one containing ciprofloxacin, an antibiotic, and the other containing the anti-inflammatory and painkiller ibuprofen . . . “

http://pubs.acs.org/doi/abs/10.1021/jf960215l  Binding of Fluoroquinolone Carboxylic Acid Derivatives to Clay Minerals


http://aac.asm.org/content/45/10/2928.full#ref-13  Effects of New Quinolones on Transepithelial Electrical Potential Difference of Tracheal Mucosa In Vivo

http://en.wikipedia.org/wiki/Piperidine  Piperidine – used as building blocks in pharmaceuticals

http://en.wikipedia.org/wiki/Piperazine  Piperazine -- used in pharmaceuticals – “The neuromuscular effects are thought to be caused by blocking acetylcholine at the myoneural junction. This action is mediated by its agonist effects upon the inhibitory GABA (γ-aminobutyric acid) receptor”.

Other

http://en.wikipedia.org/wiki/DNA_repair  DNA Repair

http://en.wikipedia.org/wiki/Intercalation_(biochemistry)  Intercalation (FQ’s intercalate when binding)


http://www.livestrong.com/article/315227-low-iodine-high-protein-diet/  Low Iodine, High protein diet


http://www.cnelm.com/NutritionPractitioner/Issues/Issue_11_1/Articles/5%20WheyProtein-%20final.pdf  Whey Protein Info

http://www.ncbi.nlm.nih.gov/pubmed/23207804 The promiscuous binding of pharmaceutical drugs and their transporter-mediated uptake into cells: what we (need to) know and how we can do so.
Carrier-mediated cellular uptake of pharmaceutical drugs: an exception or the rule?

Coexistence of passive and carrier-mediated processes in drug transport

Computational resources of protein phosphorylation

Aromatic amino acids

Glyphosate Testing

How the Human Genome is Transforming Medicine

Iodine – good info

Food intolerances in people and pets

How genes are turned on and off

Drug Treatment of Vertigo

Interesting website: “Accordingly, I don’t fit into any category: I’m not “paleo”, low carb, low fat or anything else for that matter. I do what works for me and I encourage people to do what works for them, but try out many approaches”.

No junk: Long RNA mimics DNA, restrains hormone responses

The Forgotten Longevity Benefits of Taurine

Amino acid metabolism

Amino Acid Metabolism

Cortisol Deficiency ("adrenal fatigue", "adrenal insufficiency")

Vertigo (Labrynthitis) forum comments

Detection of enterovirus infection in pancreatic islets in patients newly diagnosed with type 1 diabetes (possible viral cause of autoimmune – what do viral mechanisms have in common with toxic mechanisms in hormonal receptors/enzymes/signal transductions processes, etc).

http://fluoroquinolonethyroid.com
http://www.newyorker.com/magazine/2013/08/26/whats-wrong-with-me Nice description of “Hashi Hell”


http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2841398/ Variations in DNA elucidate molecular networks that cause disease

http://medicalxpress.com/news/2014-12-scientists-uncover-fundamental-mechanism-resveratrol.html Scientists uncover new, fundamental mechanism for how resveratrol provides health benefits. “... put TyrRS and resveratrol together and showed with tests including X-ray crystallography that resveratrol does indeed mimic tyrosine, well enough to fit tightly into TyrRS’s tyrosine binding pocket... We think this is just the tip of the iceberg,” said Schimmel. “We think there are a lot more amino-acid mimics out there that can have beneficial effects like this in people.” (this is an excellent example of “promiscuous binding” – consider FQ’s mimicking Tyr or other aromatics in binding also – except with detrimental effects)

http://faculty.clintoncc.suny.edu/faculty/michael.gregory/files/bio%20102/bio%20102%20lectures/endocrine%20system/endocrin.htm Endocrine System

http://www.snpedia.com/index.php/Rs6323 Rs6323 Monoamine Oxidase

https://www.yahoo.com/style/birth-control-almost-ruined-my-relationship-104762060738.html Birth Control Almost Ruined My Relationship. (Read comments after – what is striking about this article and the numerous comments after is how incredibly mood altering tiny shifts in hormones can be for some people—the question, of course, is why is this true for some people but not others – and are there clues here for FQ-induced endocrinopathies and “steroid psychosis” as well)