TheElite Training Group track club

Expanding the area of what is possible

In Track & Field Distance Running & Competent Self-Care in medicine and psychology

www.theetgtrackclub.com

knee meniscus, ACL & rotator cuff repair

A major part of TheETG mission is to expand the area of what is possible in competent self-care in medicine and psychology. TheETG's primary method of achieving that is to proliferate applied science based information by way of $free packets containing plain language info for anyone seeking to move themselves or others forward in these areas.

As you continue to acquire and apply more information you continue to expand the area of what is possible.
Data-less conclusions founded upon faulty assumptions are the mother of all screw-ups. They lead to human belief systems that quickly get set in stone. Put data ahead of dogma. Follow the data -not- the crowd.

TheETG packets attempt to address the following;

".....the benefits that US health care currently deliver may not outweigh the aggregate health harm it imparts."
[Journal Of The American Medical Association...Volume 302 #1..July 1, 2009...page 89 - 91]

"Not enough doctors adapt appropriately to new scientific findings.....An insufficient number of medical faculty members are well prepared, effective educators, and too few medical schools prepare their students for a lifetime of learning and change."
[J.Hilliard,et al. -- The Lancet -- Volume 385 #9969 -- February 21, 2015 -- page 672]

"….takes an average of 17 years to translate 14% of original research into benefit…..average of 9 years for interventions recommended as evidence-based practices to be fully adopted."
[M.Tinkle, et al -- Dissemination and Implementation -- Nursing Research and Practice -- Volume 2013]

".....1.5 million U.S. residents are harmed or killed each year because of medication errors, according to an Institute of Medicine report."
[Nature Medicine -- Volume 12 #9 -- September 2006 -- page 984 - 985....News In Brief]

"It is estimated that more than 700,000 individuals are seen in hospital emergency departments for adverse drug events each year in the United States."
[Centers For Disease Control -- 2015]

"Most drugs are only effective for a small percentage of people who take them."
[Michael Leavitt -- U.S. Secretary of Health & Human Services 2005 - 2009]

".....A recent study for example, found that only half of all cardiac guidelines are based on scientific evidence."</p>
[President Barack Obama -- Speech to the American Medical Association -- June 15, 2009]

"All the good things....they don't teach us in medical school, because the drug companies pay for our education."
[Dr. John Sessions M.D.]

Order of Presentation.....

--- Think “Tissue Regeneration”

--- Tissue Healing & Repair

--- If I were going to have surgery…the type of surgery I would choose

--- Problems With Being Diagnosed Based On An MRI

--- Reminder Page...Just Say No to Ice & Anti-inflammatories

--- Anterior Cruciate Ligament Tear [ACL] .....Meniscus Tear [knee Cartilage]

The quackery of Traditional Sports Medicine.
[another example of what that looks like].....

Removal of portions of the knee meniscus is standard surgery in Traditional Sports Medicine. Doing so is strongly associated with developing osteo-arthritis.

Let's examine the effectiveness of that surgery by comparing the 2 year post surgical outcomes of people that acted on the recommendation of their practitioner of quackery, relative to those that did not.....

"It is still debated whether a degenerative horizontal tear of the medial meniscus should be treated with surgery."

"A total of 102 patients with knee pain and a degenerative horizontal tear of the posterior horn of the medial meniscus...."
"Fifty patients underwent arthroscopic meniscectom, and 52 patients underwent nonoperative treatment with strengthening exercises."

"Functional outcomes were compared....."

"In terms of clinical outcomes, meniscectomy did not provide better functional improvement than nonoperative treatment."

J.H.Yim, et al
A Comparative Study of Meniscectomy and Nonoperative Treatment for Degenerative Horizontal Tears of the Medial Meniscus
American Journal Of Sports Medicine.....volume 41 #7.....July 2013.....page 1565 - 1570

Dogma.....
Data-less conclusions founded upon faulty assumptions lead to the creation of human belief systems that quickly get set in stone. As more people join in and follow the crowd, new information gets shouted down as pride, ego, and resistance to change supplant data, logic and reason. In track & field, in medicine, in health and wellness.....faulty assumptions are the mother of all screw-ups. Place data ahead of dogma. Follow the data -not- the crowd.

"In God we trust. Everyone else must bring data."---[W.Edwards Deming]
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To be a good track coach one must -first- be a good physiologist.
To be a good medical doctor one must -first- be a good physiologist.

To be a good physiologist one must -first- be willing to.....
-- put data ahead of dogma
-- put science ahead of indoctrinated tradition
-- put logic and reason ahead of faulty assumptions
-- put mechanisms ahead of correlations and "risk factors"
-- put critical thinking and clinical reasoning ahead of memorized "if-then" statements
-- aggressively keep up with, read, and apply large amounts of published research
-- accept outcomes as the judge and jury of your work

The quackery of traditional sports medicine.....

“There are many myths in modern medicine. Myths are good stories that are easy to remember, and when they include a mechanical explanation for changes in pain that make intuitive sense, they catch on and live for a long time.”
“One such story is that meniscal tears cause pain, which can be relieved by removal of the damaged meniscal tissue. This myth has been ‘busted’ by randomised, double-blinded trials in middle-aged and older patients demonstrating knee arthroscopy to be no better for degenerative meniscal tears than placebo surgery. But why does knee arthroscopy provide no better pain relief than placebo surgery?”

“The rationale for cutting away damaged meniscal tissue is based on the premise that the injured or damaged parts of the meniscus are the primary cause of the patient’s pain and discomfort.”

“More likely, the knee pain is explained by the presence of early degenerative changes (including degenerative meniscal tissue) or established osteoarthritis in the knee and not because of a direct link between pain and meniscal damage per se. Meniscal tears are common in the symptom-free general middle-aged and older population with and without signs of radiographic knee osteoarthritis.”

“Similarly, in patients with knee trauma, meniscal tears are frequently seen in the uninjured contralateral leg. Such studies debunk the explanation that meniscal tears always cause pain; the simple ‘car mechanic’ analogy—cutting tissue away—does not apply.”

J.B.Thorlund
Deconstructing a popular myth: why knee arthroscopy is no better than placebo surgery for degenerative meniscal tears
British Journal Of Sports Medicine – Volume 51 #22 – November 2017

The quackery of traditional sports medicine.....

“Labral repair and biceps tenodesis are routine operations for superior labrum anterior posterior lesion of the shoulder, but evidence of their efficacy is lacking. We evaluated the effect of labral repair, biceps tenodesis and sham surgery on superior labrum anterior posterior lesions.”

“A double-blind, sham-controlled trial was conducted with 118 surgical candidates (mean age 40 years), with patient history, clinical symptoms and MRI arthrography indicating an isolated type II superior labrum anterior posterior lesion.”

Patients were randomly assigned to either labral repair (n=40), biceps tenodesis (n=39) or sham surgery (n=39) if arthroscopy revealed an isolated superior labrum anterior posterior II lesion.”

“There were **no significant between-group differences** at any follow-up in any outcome.”

“Similar results—**no differences between groups**—were found for WOSI scores. Postoperative stiffness occurred in five patients after labral repair and in four patients after tenodesis.”

“**Neither** labral repair **nor** biceps tenodesis had any significant clinical **benefit over sham surgery** for patients with superior labrum anterior posterior II lesions in the population studied.”

C.P.Schroder, et al
Sham surgery versus labral repair or biceps tenodesis for type II SLAP lesions of the shoulder: a three-armed randomised clinical trial
British Journal Of Sports Medicine – Volume 51 #24 – December 2017

surgery --vs-- no surgery….

"The optimal treatment for acute Achilles tendon ruptures is still a subject of debate."

"A total of 100 patients (86 men, 14 women; mean age, 40 years) with an acute total Achilles tendon rupture were randomized to either surgical treatment, including an accelerated rehabilitation protocol, or nonsurgical treatment."

"There were no significant differences between the groups in terms of symptoms, physical activity level, or quality of life."

"…..this treatment was not significantly superior to nonsurgical treatment in terms of functional results, physical activity, or quality of life."

N.Olsson
Stable Surgical Repair With Accelerated Rehabilitation Versus Nonsurgical Treatment for Acute Achilles Tendon Ruptures
American Of Sports Medicine.....Volume 41 #12....December 2013...page 2604 - 2608

Removal of portions of the knee meniscus is standard surgery in Traditional Sports Medicine.
Doing so is strongly associated with developing osteo-arthritis.

"It is still debated whether a degenerative horizontal tear of the medial meniscus should be treated with surgery."

"A total of 102 patients with knee pain and a degenerative horizontal tear of the posterior horn of the medial meniscus...."

"Fifty patients underwent arthroscopic meniscectom, and 52 patients underwent nonoperative treatment with strengthening exercises."

"Functional outcomes were compared....."

"In terms of clinical outcomes, meniscectomy did not provide better functional improvement than nonoperative treatment."

J.H.Yim, et al
A Comparative Study of Meniscectomy and Nonoperative Treatment for Degenerative Horizontal Tears of the Medial Meniscus
American Journal Of Sports Medicine.....volume 41 #7.....July 2013.....page 1565 - 1570

"Ice hockey players have a high incidence of lumbar spine disorders; however, there is no evidence in the literature to guide the treatment of an ice hockey player with a herniated lumbar disc."

"To determine the performance-based outcomes in professional National Hockey League (NHL) athletes with a lumbar disc herniation after either nonsurgical or surgical treatment."

"Athletes in the NHL with a lumbar disc herniation were identified through team injury reports and archives on public record."

"A total of 87 NHL players met the inclusion criteria; 31 underwent nonoperative care, 48 underwent a discectomy, and 8 underwent a single-level fusion."

"A comparison of the posttreatment results for the nonsurgical and surgical patient groups revealed no significant difference in performance measures."

"National Hockey League players with a lumbar disc herniation have a high return-to-play rate regardless of the type of treatment…."

G.D. Schroeder, et al
Performance-Based Outcomes After Nonoperative Treatment, Discectomy, and/or Fusion for a Lumbar Disc Herniation in National Hockey League Athletes
American Of Sports Medicine.....Volume 41 #11....November 2013...page 2604 - 2608

Another example of the quackery of traditional sports medicine.....

"...compare the long-term treatment outcomes of operative versus nonoperative treatment of ACL ruptures in high-level athletes."

"50 patients with an ACL rupture were eligible for participation, and they were treated either nonoperatively (n = 25) in 1992, consisting of structured rehabilitation and lifestyle adjustments, or operatively (n = 25) between 1994 and 1996 with an arthroscopic transtibial bone–patellar tendon–bone technique."

"The patients in the nonoperative group were drawn from those who responded well to 3 months of nonoperative treatment, whereas the patients in the operative group were drawn from those who had persistent instability after 3 months of nonoperative treatment."

"Both groups.....assessed at 10- and 20-year follow-up regarding radiological knee osteoarthritis, functional outcomes, Knee injury and Osteoarthritis Outcome Score, meniscal status, and knee stability."

"All 50 patients (100%) were included in the current study for follow-up. After 20 years, we found knee osteoarthritis in 80% of the operative group compared with 68% of the nonoperative group."

"There was **no difference** between groups regarding functional outcomes and meniscectomy performed."

".....we found that after 20-year follow-up, there was **no difference** in knee osteoarthritis between operative versus nonoperative treatment....."

"Although knee stability was better in the operative group, it did not result in better subjective and objective functional outcomes."

D.T.Van Yperen, et al
Twenty-Year Follow-up Study Comparing Operative Versus Nonoperative Treatment of Anterior Cruciate Ligament Ruptures in High-Level Athletes
American Journal Of Sports Medicine — Volume 46 #5 — April 2018 — page 1129

"When ice is applied to a body part for a prolonged period, nearby lymphatic vessels begin to dramatically increase their permeability (lymphatic vessels are 'dead-end' tubes which ordinarily help carry excess tissue fluids back into the cardiovascular system).”

“As lymphatic permeability is enhanced, large amounts of fluid begin to pour from the lymphatics 'in the wrong direction' (into the injured area), increasing the amount of local swelling and pressure and potentially contributing to greater pain."

The use of Cryotherapy in Sports Injuries
Sports Medicine….Volume 3…..1986….page 398 – 414

“The use of ice or cryotherapy in the management of acute soft tissue injuries is widely accepted and widely practiced. This review was conducted to examine the medical literature to investigate if there is evidence to support an improvement in clinical outcome following the use of ice or cryotherapy.”
“Six relevant trials in humans were identified, four of which lacked randomization and blinding. There were two well conducted randomized controlled trials, one showing supportive evidence for the use of a cooling gel and the other not reaching statistical significance.”

“Four animal studies showed that modest cooling reduced edema but excessive or prolonged cooling is damaging. There were two systematic reviews, one of which was inconclusive and the other suggested that ice may hasten return to participation."

“There is insufficient evidence to suggest that cryotherapy improves clinical outcome in the management of soft tissue injuries.”

Is Ice Right? Does Cryotherapy Improve Outcome for Acute Soft Tissue Injury?
Journal of Emergency Medicine….February 25, 2008…..page 65 - 68

A diagnosis of torn knee cartilage is not a diagnosis of an injury

By Marshall Burt

The take home message…...a diagnosis of torn knee cartilage is not a diagnosis of an injury. Elite athletes that have no pain and no problems have fully torn knee cartilage.
My first job in sports medicine, other than as a track coach was in the late 1980's at what was at the time one of our country's largest sports medicine clinics. Even in those days, NFL linemen were playing without an ACL. It does not follow that an ACL tear or torn meniscus must automatically be treated with surgery, let alone traditional surgery that often ends in osteo-arthritis a few years or a couple decades down the road.

"We conducted a systematic review of multiple databases, evaluating studies of the prevalence of articular cartilage defects in athletes."
"40% of athletes were professionals [NBA and NFL]."

"The overall prevalence of full-thickness focal chondral defects in athletes was 36%..."
"14% of athletes were asymptomatic at the time of diagnosis."

"Meniscal tear [47%] was the most common concomitant knee pathological finding, followed by anterior cruciate ligament tear [30%] and then medial collateral ligament or lateral collateral ligament tear [14%].

"Full-thickness focal chondral defects in the knee.....More than one-half of asymptomatic athletes have a full-thickness defect."

D.C. Flanigan, et al
Prevalence of Chondral Defects in Athletes' Knees: A Systematic Review
Medicine & Science in Sports & Exercise....Volume 42 #10....October 2010.....page 1795 - 1801

The effects of an excessive use of medical imaging machines;

definitions....
--- iodinated contrast media = the stuff they give you before they use a machine to look inside your body.
--- iodinated = contain iodine....a lot of iodine, perhaps too much iodine

Science Daily [January 23, 2012]---
"Exposure to iodinated contrast media during imaging procedures is associated with changes in thyroid function, and increased risk of developing hyperthyroidism..."
"In summary, these data support association between iodinated contrast media exposure and incident hyperthyroidism..."

C. M. Rhee, et al
Association Between Iodinated Contrast Media Exposure and Incident Hyperthyroidism and Hypothyroidism
Archives of Internal Medicine.....Volume 172 #2.....2012.....page 153

Think “Tissue Regeneration”

Regardless of what athletes are told by an orthopedist, all tissues in and around the knee and shoulder can be healed through loading.

There are zero exceptions.

Almost all non-tissue regeneration oriented surgeries are no more effective than placebo surgery. And surgery can result in no change in pain symptoms. Once someone cuts into these
joints you're all but guaranteed to be on the path to degenerative issues years down the road.

People are quite willing to engage in months of rehab exercises after various types of surgery, but quite un-willing to try that on the front-end, instead of surgery.

Damaged tissue....If you load it, healing will come.

Especially if you avoid ice, anti-inflammatories, and any other traditional approach that suppresses cells that heal damaged tissue.

A video showing you what happens with Placebo Surgery compared to real surgery.....
http://www.youtube.com/watch?v=zwXokKJ7hss

Just say no to practitioners of traditional Sports Medicine.....
".....primary research evidence only accounted for 24% of management....."
"Practitioners were unaware of literature supporting over 50% of the treatment modalities they used."
"This study highlights a lack of evidence base, a lack of knowledge of the research evidence..that is available for these conditions."
"Practitioners practiced evidence based medicine in under 50% of cases."
I.R. Murray, et al
How Evidence Based Is The Management Of Two Common Sports Injuries In A Sports Injury Clinic?
British Journal Of Sports Medicine..Volume 39 #12...December 2005..page 912

"We understand the clinical implications of conditions such as tendinosis and stress fractures and can make the diagnosis, but we treat them imperfectly.
Robert Leach [Editor.....American Journal Of Sports Medicine]
American Journal Of Sports Medicine.....Volume 28 #3.....2000.....page 281

regenerative medicine.....

"Autologous chondrocyte implantation has been shown to be effective in the midterm for the treatment of symptomatic articular cartilage lesions of the knee, but few long-term series have been published."

"This is a prospective case series of 104 patients with a mean age of 30.2 years and a symptomatic lesion of the articular cartilage in the knee, who underwent Autologous chondrocyte implantation between 1998 and 2001. The mean duration of symptoms before surgery was 7.8 years."

"The defects were large, with a mean size of 477.1 mm2"

".....assess pain and functional outcomes at a minimum 10 years (mean, 10.4 years; range, 10-12 years)."

"Twenty-seven patients (26%) experienced graft failure at a mean of 5.7 years after Autologous chondrocyte implantation. Of the 73 patients who did not fail, 46 patients (63% of patients with a surviving graft) had an excellent result, 18 (25%) were good, 6 (8%) were fair, and 3 (4%) had a poor result."

"Of a total of 100 patients successfully followed up, 98 were satisfied with the Autologous chondrocyte implantation technique for their chronic knee pain and would undergo the procedure again."

"Autologous chondrocyte implantation can provide a long-term solution in more than 70% of young patients of a difficult-to-treat group with large chronic articular cartilage lesions, even in the salvage situation."

Leela C. Biant, et al
Long-term Results of Autologous Chondrocyte Implantation in the Knee for Chronic Chondral and Osteochondral Defects
American Journal Of Sports Medicine.....Volume 42 #9...September 2014....2178 - 2183

Tissue Healing & Repair

by Marshall Burt

I would strongly encourage you to question your assumptions since in all areas of medicine, especially sports medicine, faulty assumptions lead to unfortunate conclusions that lead to unfortunate treatment choices which lead to unfortunate treatment outcomes.

In all areas of medicine, when you choose the treatment you choose the consequences, whether they be good or bad.

--- As an athlete you know that -not- all training is the same. Different ways of training lead to different outcomes.
--- Likewise for physical therapy.
--- Fibroblast and chondrocyte cells around the meniscus require a specific stimulus.
--- Going to "PT" but not getting the stimulus can lead to a faulty assumption.

Faulty Assumption ---- "All physical therapy is the same and yield the same outcomes."
Faulty Assumption ---- "Because I tried physical therapy and it didn't work, traditional surgery is the only option available"

"Menisectomy has been the standard surgical treatment for a torn meniscus, but clinical studies have demonstrated a strong association between menisectomy and the development of osteo-arthritis."
G.M.Peretti, et al
Cell-Based Therapy For Meniscal Repair
The American Journal Of Sports Medicine..Volume 32 #1.2004..page 146 - 154

Were I in your position, in following present day research I would know that.....

Shoulder.....
--- Cells in damaged shoulder tissues respond to "eccentric" type muscle contractions.
--- They do -not- repair --fully-- in response to normal [ie, concentric], standard physical therapy types of exercise.
--- They do -not- repair --fully-- in response to low or moderate weight, low or moderate resistance types of strengthening exercises.
--- They do fully repair and restore to full pre-injury function in response to high weight, high resistance types of strengthening exercises that include.....a very large focus.....on "eccentric" types of muscle fiber movements.
--- They do fully repair and restore to full pre-injury function in response to very high velocity strengthening exercises done with low weight or low resistance.
--- They do fully repair and restore to full pre-injury function when --not-- supplied with things that suppress their function [ie. anti-inflammatories, cortisone shots, ice].
--- They do fully repair and restore to full pre-injury function when supplied with nutrients that improve their function such as.....protein taken just before or just after physical therapy, high dose vitamin C, Vitamin D3, liquid colostrum, shea triterpenes [in a product called "Flex Now"].

Knee.....
--- Cells that repair damaged meniscus are suppressed by use of anti-inflamatories and ice, the most common things in traditional sports medicine, which is one of the 2 reasons why the menicus doesn't heal quickly
and therefore faulty assumptions get made about whether or not it can heal.
--- Cells that repair damaged meniscus do -not- repair in response to normal low or moderate weight, low or moderate resistance types of strengthening exercises.
--- They do fully repair and restore to full pre-injury function in response to high weight, high resistance types of strengthening exercises that include.....a very large focus.....on downward, compressive forces [ie. squat exercise]
--- They do fully repair and restore to full pre-injury function in response to very high velocity strengthening exercises that focus on downward, compressive forces done with low weight or low resistance [ie jump squats, single leg bouding with no added weight, etc].
--- They do fully repair and restore to full pre-injury function when --not-- supplied with things that suppress their function [ie. anti-inflammatories, cortisone shots, ice].
--- They do fully repair and restore to full pre-injury function when supplied with nutrients that improve their function such as.....protein taken just before or just after physical therapy, high dose vitamin C, Vitamin D3, liquid colostrum, shea triterpenes [in a product called "Flex Now"].

If I were going to have surgery

by Marshall Burt

The type of procedure I would pursue would be.....

Shoulder ---

Tissue regeneration, more popularly known as "Regenerative Medicine".
--- placement of stem cells from my non-injured shoulder into my injured shoulder that repair the tear.
--- "Platelet Rich Plasma Prolotherapy"...injection of stuff taken from the part of my blood called "plasma".
It dramatically aids the function of the cells that repair the tissue.
--- after one of these types of surgery I would then engage in the tissue strengthening previously mentioned.

Knee ---

Tissue regeneration, more popularly known as "Regenerative Medicine".
Treatment options I would be looking at;

For menisucs....

--- placement of stem cells or chondrocytes from my non-injured knee into my injured knee that fill in and repair the tear, more popularly known as "Carticel"
--- Bone Marrow Prolotherapy, or Hackett-Hemwall Prolotherapy
--- after one of these types of surgery I would then engage in the tissue strengthening previously mentioned.

For ACL....

--- sheath placed on ACL that bridges the tear. The cells on the sheath health the tissue
--- after one of these types of surgery I would engage in the tissue strengthening previously mentioned.

Finding competent people that keep up with research.....

--- go to Knee1.com
--- look under "Reference"
--- click on "Find A Doctor"
--- then click on "Find A Cartilage Repair Specialist"
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Girls and the ACL

Girls experience 5 or more times the knee ligament ACL tears than boys. Contrary to the belief system of practitioners of Traditional Sports Medicine, that's not about gender or estrogen's effects on ligaments, its about our culture.

As little kids growing up in our culture, girls hang from tree limbs, bars, and jungle-gyms less than boys. Girls jump up to or down from trees, walls, and other heights less than boys. Little girls play tag and other running games that require sharp changes in direction during high speed running, and quick stopping and change of direction via high force foot plants, than boys.

ACL tears are about hamstring strength. The hamstring muscles on the back of the thigh help the ACL stop the forward movement of the top of the lower leg during high force foot plants, landing from a height, and change of direction during high speed running.

Parents and coaches.....please strength train the hamstrings of your girls starting at an early age.
Basketball, soccer, lacrosse, high jump in track. Girls and women have 5 or more times the ACL injury rate as boys and men. That's reversable phenomena.
Hamstring curls, 1/4 squats, change of direction sprint drills, jumping down from a height.

Do it on purpose.
4 years old is too young. Everything else is fair game.
The exercises aren't gonna prevent all ACL tears, just make it so girls don't have 5 or more times the rate.

The exercises listed here aren't gonna prevent all ACL tears, but that's not to say that achieving that result is impossible……"strengthen your tissues to endure the loads you place on them".

Lots of research data available these days showing that the ACL responds to load just like muscle and tendon. The ACL gets thicker in response to training and other activities. And like other tissues it responds to dis-use by getting thinner.

And its worth adding given the times in which we live that if one tears their ACL the worst possible choice is traditional "reconstruction" surgery. Regenerate the tissue. There are a million and one ways to do that now. Zero of which are experimental. The most effective being the mode of surgery that puts a sheath around the broken ends, the sheath contains the cells that reproduce the broken tissue. It isn't new, it works, no osteo-arthritis down the road, and no such thing as a "season ending injury" for the NFL or NBA player for an injury sustained at the beginning of a 4 month long season.

"Female basketball players are more likely to tear their anterior cruciate ligament than are their male counterparts."

".....investigated the differences in anterior cruciate ligament tears.....in women of different racial or ethnic backgrounds playing in the Women's National Basketball Association....."

".....tear rates in the Women's National Basketball Association vary by racial group, with White European American players having **more than 6 times** the anterior cruciate ligament tear rate of other ethnic groups combined."

T.H. Trojian, et al
The Anterior Cruciate Ligament Tear Rate Varies by Race in Professional Women's Basketball
American Journal Of Sports Medicine.....Volume 34 #6.....June 2006.....page 895 - 898

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Problems With Being Diagnosed Based On An MRI.....

"Asymptomatic" means, you have no symptoms, no pain, no problems.
An MRI showing damage to a knee meniscus, lower back disc, shoulder rotator cuff, etc may not mean what the doctor says it does. Is the damage you see on the MRI the actual cause/source of the pain. Faulty assumptions are the mother of all screw-ups.

The test = MRI magnetic resonance imaging

"Treat the patient, not the test".....

"26% true-positive results.....74% false-positive results"

"Of the 45 patients who did not undergo arthroscopic surgery, 6 had isolated anterior horn tears reported on magnetic resonance imaging, and 5 of the 6 were asymptomatic at follow up."

"....without clinical correlation, reliance on MRI to diagnose meniscal injuries could lead to unnecessary operations.....meniscal tears may be asymptomatic, and the presence of a tear does not necessarily account for a patient's symptoms."
M.F. Shepard, et al
The Clinical Signifcance Of Anterior Horn Meniscal Tears Diagnosed On Magnetic Resonance Images
American Journal Of Sports Medicine.....Volume 30 #2...2002

"Spinal magnetic resonance imaging often reveals alarming but clinically irrelevant findings, and adults with back pain who receive magnetic resonance imaging results may experience worse dysfunction than those not given the results."

"....."medicalizing" normal phenomena are as harmful as unrealistic expectations and are fostered frequently by marketing hype...."
C.M. Kilo, E.B. Larson
Exploring the Harmful Effects of Health Care
Journal Of The American Medical Association.....Volume 302 #1....July 1, 2009....page 89 - 91

"Some clinicians do lumbar imaging routinely or in the absence of historical or clinical features suggestive of serious low-back problems."

"We investigated immediate lumbar imaging versus usual clinical care....on clinical outcome...."

"Lumbar imaging for low-back pain without indications of serious underlying conditions does not improve clinical outcomes."

"Therefore, clinicians should refrain from routine, immediate lumbar imaging..."
R.Chou, et al
Imaging strategies for low-back pain: systematic review and meta-analysis
The Lancet....Volume 373 #9662....February 7, 2009....pages 463 - 472

"....several studies have shown that at least a third of asymptomatic people in their 20's have at least one degenerate lumbar disc."
A. Ong, et al
A Pilot Study The Prevalence Of Lumbar Disc Degeneration In Elite Athletes With Lower Back Pain At The Sydney 2000 Olympic Games
British Journal Of Sports Medicine....Volume 37...2003...page 263

"....evaluate the magnetic resonance imaging findings in both shoulders of asymptomatic....pitchers."

"....MRI....scans of rotator cuff tendons."

"Ten athletes....painless full range of motion."

"The labrum was abnormal in 79% of shoulders."

"....magnetic resonance imaging of the shoulder in asymptomatic....athletes reveals abnormalities that may encompass.....non-clinical findings."

"...studies of asymptomatic "average" volunteers have demonstrated that many signal changes can be present even when symptoms are absent."
A.Miniaci, et al
Magnetic Resonance Imaging Of The Shoulder In Asymptomatic Professional Baseball Pitchers
American Journal Of Sports Medicine.....Volume 30 #1....2002....66

"The incidence of rotator cuff tears has been reported to be as high as 39% in cadaveric and imaging studies, although many of these tears may be asymptomatic."
L.K.Y. Lo, et al
Matrix Metaloproteinase And Tissue Inhibitor Of Matrix Metaloproteinase mRNA Levels Are Specifically Altered In Torn Rotator Cuff Tendons
American Journal Of Sports Medicine.....Volume 32 #5.....2004....page 1223

My FDA warning of the week.....

On December 19, 2017, FDA announced that it is requiring a new class warning and other safety measures for all gadolinium-based **contrast agents for magnetic resonance imaging (or MRI)** concerning gadolinium **remaining in patients' bodies, including the brain, for months to years** after receiving these drugs."

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"....after review and consultation with the Medical Imaging Drugs Advisory Committee, we are requiring several actions to alert health care professionals and patients about gadolinium retention after an MRI using a gadolinium-based contrast agent. These include requiring a patient Medication Guide that every patient will be asked to read before receiving a gadolinium-based contrast agent. We are also requiring manufacturers of gadolinium-based contrast agents to conduct human and animal studies to further assess the safety of these agents."

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"Gadolinium-based contrast agents are used with MRIs and contain gadolinium, a heavy metal. They are injected into a vein to improve visualization of internal organs, blood vessels, and tissues during an MRI."

Reminder page....Just Say No to Ice & Anti-inflammatories

Heal Faster

The primary reasons injuries often take people several weeks to several months to deal with are;

--- Providing a low or no stimulus for healing. Doing so-called "strengthening exercises" with little or no weight//resistance [ie. use of rubber tubing, etc]. The amount of weight/resistance determines the amount of stimulus for cells that are responsible for healing.

--- Doing a bunch of reps and sets of "strengthening exercises" with no progressive increase in weight//resistance as strength of the tissues increase.

--- The frequency of application of a strengthening stimulus is a major determining factor on the rate of healing. If you're seeing a physical therapist, chances are you'll be going only once or twice a week. If this is the only time that strengthening of the tissue is being induced, recovery will take quite a few weeks.

--- Multiple uses of ice, anti-inflammatories, and anything else that decreases blood flow to a healing tissue, and/or decreases immune cell function in and around a healing tissue.....will also account for a slow recovery time. Rest and stretching are usually insufficient to improve the tissue's ability to withstand training loads.

--- Recurrent attempts to return to training before the tissue has acquired the strength necessary to endure their training loads.

Say No To Drugs

Following the initial 24-48 hour period of injury, application of heat stimulus (5 - 10 minutes limb water submersion 100-105 degrees F) should be used to increase blood flow and energy production for repair processes. Ingestion of NSAID's (anti-inflamatories) should be avoided since this will impair recovery, and potentially mask pain, leading one to believe it is ok to return to training.
Never...ever....under "any" circumstances...allow a doctor to inject the tissue with cortisone or any other substance that is well known to cause degradation of collagen and other tissue proteins.

"The use of nonsteroidal anti-inflammatory drugs for the treatment of tendon inflammation might increase the levels of leukotriene B4 within the tendon, potentially contributing to the development of tendinopathy."

"This finding is of interest because NSAID's are routinely used in clinical practice for the symptomatic treatment of tendinopathy, such as inflammation and pain."

"..the increased LTB4 level due to treatment with NSAID's could potentially exacerbate the situation by leading to neutrophilic infiltration and lymphocytic activation, paradoxically causing further inflammatory and degenerative changes in the tendon."

"..the results of this study suggest that the routine use of COX inhibitors for the symptomatic relief of inflammatory tendon conditions might inadvertently worsen the processes responsible for the development of tendinopathy."
Zhaozhu Li, et. al
Inflammatory Response Of Human Tendon Fibroblasts To Cyclic Mechanical Stretching
The American Journal Of Sports Medicine..Volume 32 #2....2004...page 435 - 439

"Prostaglandins....potent modulators of inflammation.....inhibitors of prostaglandin synthesis known as non-steroidal anti-inflammatory drugs [NSAID's]..."

"Skeletal muscle regeneration comprises several overlapping cellular processes, including inflammation....."

"Prostaglandins may regulate muscle regeneration...."

"Prostaglandin synthesis is catalyzed by.....cyclo-oxygenase [COX], which are inhibited by anti-inflammatory drugs."

"COX-2 dependent prostaglandin synthesis is required during early stages of muscle regeneration and thus raise caution about the use of COX-2 selective inhibitors...."
B.A.Bondesen
The COX-2 Pathway Is Essential During Early States Of Skeletal Muscle Regeneration
American Journal Of Cell Physiology.....Volume 287.....2004....C475 - 483

iceing = cryotherapy --- just say no to cryotherapy.....
"....the administration of nonsteroidal anti-inflammatory drugs or cryotherapy are common clinical practices to control the inflammatory process following connective tissue injury. However, there are contradictory conclusions on the potential of anti-inflammatory strategies to either prevent nonspecific damages or accelerate healing after acute tendon or ligament trauma."

"Cumulative evidences also show that, apart from releasing catabolic enzymes, inflammatory cells can ultimately favor tissue healing through different biological processes."

"Indeed, after the clearance of pathogens and other signals of danger, neutrophils will undergo apoptosis and be engulfed by phagocytic macrophages. Macrophages will then release growth factors that can stimulate fibroblast proliferation, collagen synthesis, and angiogenesis during the early phase of healing."
D.Marsolais, et al
Inflammatory cells do not decrease the ultimate tensile strength of intact tendons in vivo and in vitro: protective role of mechanical loading
Journal Of Applied Physiology.....Volume 102 #1.....January 2007.....page 11 - 17

Just say no to practitioners of traditional Sports Medicine...
".....primary research evidence only accounted for 24% of management....."
"Practitioners were unaware of literature supporting over 50% of the treatment modalities they used."
"This study highlights a lack of evidence base, a lack of knowledge of the research evidence..that is available for these conditions."
"Practitioners practiced evidence based medicine in under 50% of cases."
I.R. Murray, et al
How Evidence Based Is The Management Of Two Common Sports Injuries In A Sports Injury Clinic?
British Journal Of Sports Medicine..Volume 39 #12...December 2005..page 912

"We understand the clinical implications of conditions such as tendinosis and stress fractures and can make the diagnosis, but we treat them imperfectly.

Robert Leach [Editor.....American Journal Of Sports Medicine]
American Journal Of Sports Medicine.....Volume 28 #3.....2000.....page 281

There is a long list of naturopathic--homeopathy products, a longer list of nutrition medicine products that work a bit slower.

In the area of slow acting nutrition medicine.....high grade fish oil, vitamin D3, resveratrol, magnesium [bath in epsom ...salts], high grade Aloe Juice [http://www.lilyofthedesert.com/], triterpene [Flex Now Joint Forumla http://www.flexnow.us/aboutus].

In the area of fast acting naturopathic--homeopathy products.....anyone of a large number of research based, evidence based concentrated botanicals [turmeric, etc.]. The American Botanical Council is based here in Austin. They gather research, clinical trials, and news involving botanicals. http://abc.herbalgram.org/site/PageServer?pagename=Homepage

A company called Heel is a massive distributor of homeopathy products....http://heelusa.com/

Anterior Cruciate Ligament (ACL) Tear Meniscus (knee Cartilage) Tear

Receiving an accurate diagnosis can be challenging. Often, doctors are unaware that knee MRI's on people who have no knee pain can look similar to the knee MRI's of people who do.....the point being that a lot of people have damaged looking knee ligaments and cartilage (meniscus) but have no pain or sport problems.

The most obvious thing about the damage which occurs with knee injury is that it is reversible. Traditional treatment makes this difficult. Anti-inflamatory pills (NSAID's) or injections of cortisone work to destroy immune cell function within the joint, reduces the production of new blood vessels into already blood starved tissues, and decreases fibroblast migration and therefore, new tissue production. This attempt to decrease the patient's pain and swelling, actually reduces the patients ability to heal.

Prior to opting for traditional surgery, or even for the more current tissue regenerative surgical approaches, it is best to try to take advantage of the cells in the knee to see if you can get them to regenerate the tissue via high intensity loading [strength training, ie. 1/4 squats, etc]. Cells around the meniscus respond to vertical compressive forces. A hurt not harm principle should be followed. Its gonna hurt! Pain killers and anti-inflammatories reduce healing by suppressing the function of inflammatory cells that produce growth factors which stimulate tissue healing. Immobilization with anti-inflammatories and ice. This has been the standard post injury approach that has caused sports medicine practitioners to conclude that the meniscus fails to heal on it's own [especially the medial meniscus]. Lack of blood supply has taken most of the blame. Researchers are re-examining that assumption. It may be that immobilization with anti-inflammatories and ice are to blame. The attempt to reduce pain and swelling may be the enemy of non-surgical repair of the human meniscus.

"The optimal management of a torn anterior cruciate ligament of the knee is unknown."

"We conducted a randomized, controlled trial.....we compared.....structured rehabilitation plus early ACL reconstruction and structured rehabilitation..."

"....a strategy of rehabilitation plus early ACL reconstruction was not superior to a strategy of rehabilitation plus optional delayed ACL reconstruction. The latter strategy substantially reduced the frequency of surgical reconstructions."
R.B. Frobell, et al
A Randomized Trial of Treatment for Acute Anterior Cruciate Ligament Tears
...New England Journal Of Medicine.....Volume 363 #4....July 22, 2010.....page 331-342

"Fibrochondrocytes of meniscus adapt to changes in their biomechanical environment....."

"....the mechano--responsiveness of fibrochondrocytes under normal and inflammatory conditions was investigated."

"Our findings indicate that mechanical signals act as potent anti-inflammatory signals, where their magnitude and frequency are critical determinants of their actions. Furthermore, mechanical signals continue attenuating proinflammatory gene transcription for prolonged periods of time after their removal."
M.Ferretti
Dynamic biophysical strain modulates proinflammatory gene induction in meniscal fibrochondrocytes
American Journal Of Physiology.....Volume 290 #6.....June 2006.....page C1610-C1615

Tradition -----
The standard treatment is surgery to remove and/or reconstruct the tissue. This often contributes to later progression to osteo-arthritis in the joint. The reason a doctor will tell you that cutting out the loose portion of the meniscus is the "only" way to go is because the torn portion(s) has an insufficient ability to heal itself. This is because the cells responsible for healing the tissue (mesenchymal cells) have an insufficient ability to adhere themselves to the surface of the tissue in the torn area so that they can produce new tissue to heal the tear. However, there does exist ways of creating a situation where these cells can indeed adhere to the tear area and fill in the tear with new, strong, and healthy tissue.

Not Tradition -----
Surgical repair of an ACL should consist of placing a degradable sheath around the two broken ends of the ligament to form a tube like structure. Fibroblast cells will adhere themselves to the sheath and reproduce the ligament tissue. Fibroblasts can also be transplanted from the other knee, into the injured one. To aid healing, injection of growth factors to stimulate fibroblast function and injection of angiogenesis (production of new blood vessels) inducing substances to induce blood supply to damaged area and increase healing should be done.

Meniscus tissue tends to not grow back on its own in a portion of it where blood supply is lacking. This is generally due to poor number and function of the cells that reproduce meniscus tissue [chondrocyte cells]. Surgical repair of a torn meniscus should consist of injection of growth factors [basic Fibroblast Growth Factor] that stimulate chondrocyte cell production and function and injection of angiogenesis (production of new blood vessels) inducing substances to induce blood supply to damaged area and increase healing. This can be done instead of, or along with.....taking cells that reproduce menisus tissue [chondrocytes] from the knee, growing them into substantial numbers outside the body , then replacing them into the knee.

"..basic fibroblast growth factor...stimulates the activity of fibrochondrocytes by enhancing proliferation..in all meniscal zones,including the inner [avascular] zone of the meniscus."

"These results indicate that meniscal cells...and cells from the avasucular zone are capable of responding favorably to the addition of basic fibroblast growth factor..."
N.S. Tumia, et. al
Promoting The Proliferative And Synthetic Activity Of Knee Meniscal Fibrochondrocytes Using Basic Fibroblast Growth Factor In Vivo
American Journal Of Sports Medicine...volume 32 #4...2004.page 915
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comparative effectiveness research"....The study below compares the outcomes of 2 surgical approaches. One that includes cutting any small portion of the meniscus [which leads to osteo-arthritis eventually] versus repairing the meniscus.
[partial meniscectomy].....vs.....repair.

"The influence of standard meniscus treatment strategies regarding osteoarthritic progress, function, and sports activity has not been estimated in a direct long-term comparison."

"Eighty-one patients with an arthroscopic meniscus shape-preserving surgery after isolated traumatic medial meniscal tear (repair: n = 42; meniscectomy: n = 39) were examined clinically...."
"....the follow-up was divided into midterm (3.4 years; n = 35) and long term (8.8 years; n = 46)."

"In the long-term follow-up, no osteoarthritic progress was detectable in 80.8% after repair compared with 40.0% after meniscectomy....."

"The preinjury activity level was obtained in 96.2% after repair compared with 50% after meniscectomy..."

"Arthroscopic meniscal repair offers significantly improved results.....regarding the long-term follow-up in osteoarthritis.....and sports activity recovery compared with partial meniscectomy."

T. Stein, et al
Long-Term Outcome After Arthroscopic Meniscal Repair Versus Arthroscopic Partial Meniscectomy for Traumatic Meniscal Tears
Amercian Journal Of Sports Mecine....Volume 38 #8.....August 2010.....page 1542-1548

Quadriceps Or Hamstrings In ACL Rehab. -----
Most rehab programs are erroneously focused on strengthening the quadriceps [muscles on front of the thigh] in their role as a knee extensor [straiten leg]. Quadriceps function is actually helps to create the anterior [forward] movment of the tibia [lower leg] that the ACL is used to prevent. The rehab and prevention efforts, should focus on the hamstrings and glutes [muscles on the back of the leg] in their role as leg extensors. The hamstrings especially, since they have the ability to take over some of the forces that the ACL would otherwise have to deal with on its own, which is a mechanism of injury. Thus, it isn't weak quadriceps that is the mechanism of injury, but more likely weak hip extensors, especially the hamstrings in their role as an extensor muscle.

Volume Vs. Intensity -----
Nearly all rehabilitation programs for knee patients end-up placing the tissue of the patient in an "overtrained" state. Combining this with NSAID's and repeated cortisone shots extends the rehab period for months or years and leads the patient to frustration and burnout. Doctors and physical therapists go in favor of low resistance, massive repetitions and/or sets.

In volume vs. intensity, it is a settled question in the research and conceptually, that it is volume that kills, and intensity that heals. Fibroblast cells in the mensicus area are stimulated to produce new tissue by the gravity induced compression forces we experience during standing, walking, squats, etc., basically all the things the patient will be told not to do for several days to weeks.

When the patient is allowed to be weight bearing, therapists are quick to put them on stair machines, which effectively places the tissues in and around the knee in an "overuse" situation where net destruction of tissue will far exceed net production. Compressive downward forces are the stimulus which activates fibroblasts in the meniscus, and the force of fluid movement in the knee joint produced by downward compressive forces also stimulates ACL fibroblast activity.

ETG Research Based Competent Self-Care Injury Repair -----
What To Do At The First Sign Of An Injury.....
- Begin daily intake of Vitamin C, Colstrum, Ribose, Vitamin D3, Aloe Juice, Probiotics, IMPACT Advanced Recovery [see ETG Nutrients for brand and dosage details].
- Begin 7 days of daily tissue strengthening and single leg bounding [following a hurt not harm principle]. See details below. High intensity work, based on a "hurt not harm" principle, is what yields results. If you're doing exercises with weight/resistance that allows you to do 12 - 20 reps without stopping.....this slows/prevents recovery, even though you are doing....."strength training"
- Begin 10 minute hot Jacuzzi or whirlpool baths in a 1 day on, 1 day off format.
- Begin 10 minute epson salt hot baths in a 1 day on, 1 day off format.
- No slowing or suppressing the rate of tissue recovery and regeneration by running in the pool, exchaning one form of overtraining for a continuation of same else where
- No slowing or suppressing the rate of tissue recovery and regeneration by taking anti-inflammatories, use of ice or ice baths, or getting cortisone shots.
- Move to strengthing exercises in a 1 day-on 2 days-off format.

ETG Tissue Strength Training Rules -----
--- Use high resistance/weight, jump height, jump distance [doing 4 reps] once a day, each day for 7 days.
--- Work with a weight you cannot lift more than 8 times without stopping.
--- Precede this with 4 repetitions of low to moderate weight, with each repetition done extremely slowly.
--- On the Single Leg Bounding, start with whatever height and distance is well tolerated, and progress from there to jumping higher off the ground. Precede this with a set of about 4 repetitions of lite hopping. Then do 4 reps of more aggressive work, rest and repeat once more.

Increase Strength Of Involved Tissues: ETG Exercise List -----
[Start with whatever is well tolerated and progress during the 7 day period to more aggressive work]
--- Single Leg Bounding [do jumping exercise, one leg at a time]. Take off and land on the same leg. Get off the ground as quickly as possible, while also jumping for both height and distance. After taking off, the landing counts as one [1] ground contact. Do 4 ground contacts, then rest and repeat on other leg].

--- 1/4 squat [one leg at a time].....going only 1/4 of the way down rather than going all the way down or halfway down. You're never in a sitting position when you run, you're in a 1/4 squat position during the stance phase of the running stride.....that's as far down as you get when running, thus that is as far down as you should go in this exercise.

--- Calf raise [one leg at a time].....stand on one leg and push yourself up until the heel is slightly off the ground.

--- Balance “Skater Pose”.....on one leg, raise other leg to the rear. Do 4 reps slowly.

"....increased hamstring muscle force could dynamically substitute for the ACL during stressful activities."

"The hamstring muscles are believed to play an important role in the control of anterior tibia displacement."

".....reductions in anterior displacement of the tibia depended on hamstring muscle load with larger hamstring loads resulting in large posterior tibia shifts. It was concluded that hamstring muscle coactivation provides a synergistic action to the ACL by preventing excessive anterior tibia displacement."
L.R. Osternig, et al.....2000
Human Hip And Knee Torque Accomodations To Anterior Cruciate Ligament Dysfunction
European Journal Of Applied Physiology.....Volume 83.....2000.....page 71 - 76

People/companies you can call to try to locate a doctor in Texas who performs the type of surgery discussed;
--- Dr. Jack Seaquist, Austin, Texas (512) 454-4561
--- Dr.Kevin Stone [Stone Foundation For Sports Medicine and Arthritis Research....San Francisco, California]...(415) 563-3110 ---- www.stoneclinic.com
--- Genzyme Tissue Repair [Boston, Massachusetts] [617] 494-8484 [Web Site: www.carticel.com]

For others in your area
--- go to Knee1.com
--- look under "Reference"
--- click on "Find A Doctor"
--- then click on "Find A Cartilage Repair Specialist"

Anterior cruciate ligament [ACL] injury.

Its the hamstrings not the quads.

"....increased hamstring muscle force could dynamically substitute for the ACL during stressful activities."

"The hamstring muscles are believed to play an important role in the control of anterior tibia displacement."

".....reductions in anterior displacement of the tibia depended on hamstring muscle load with larger hamstring loads resulting in large posterior tibia shifts. It was concluded that **hamstring muscle coactivation provides a synergistic action to the ACL** by preventing excessive anterior tibia displacement."

L.R. Osternig, et al

Human Hip And Knee Torque Accomodations To Anterior Cruciate Ligament Dysfunction

European Journal Of Applied Physiology.....Volume 83.....2000.....page 71 - 76

"Girls with lower hamstring strength displayed significantlygreater knee abduction alignment, reduced hip abductionmoments, and greater ACL loading at the time of the peakanteroposterior ground reaction forces compared with theirstronger counterparts."

"Girls with reduced hamstring strength appear to have a decreased capacity to control lower limb frontal plane alignment. This reduced capacity appears to contribute to increased ACL loading and, in turn, increased potential for injury."

C.Y. Wild, et al

Insufficient Hamstring Strength Compromises Landing Technique in Adolescent Girls

Medicine & Science In Sports & Exercise.....Volume 45 #3....March 2013....page 497 - 505

"..prevalence of osteo-arthritis after ACL reconstruction ranges from 13% - 65% at 3 to 9 years, respectively."

"Five years after the start of treatment, the authors....found a higher incidence of osteo-arthrosis in patients who had undergone operative treatment than in patients who had non-operative treatment."
T. Hogervorst, et.al
Changes In Bone Scans After Anterior Cruciate Ligament Reconstruction
American Journal Of Sports Medicine....Volume 30 #6...November-December 2002...page 823

"Menisectomy has been the standard surgical treatment for a torn meniscus, but clinical studies have demonstrated a strong association between menisectomy and the development of osteo-arthritis."
G.M.Peretti, et al
Cell-Based Therapy For Meniscal Repair
The American Journal Of Sports Medicine..Volume 32 #1.2004..page 146 - 154

"We understand the clinical implications of conditions such as tendinosis and stress fractures and can make the diagnosis, but we treat them imperfectly."

"We need to find a true biologic solution for these types of chronic conditions. As usual, our old friends the torn meniscus and torn ACL lie waiting for the ultimate solution: primary healing."
Robert Leach
Editor.....American Journal Of Sports Medicine
Volume 28 #3.....2000.....page 281

"Previous studies that isolated chondrocytes seeded into both cartilaginous and meniscal matricies were able to bond separate pieces together"

"..adhesion strength increased over time.."
G.M. Perretti, et. al
Cell-Based Therapy for Meniscal Repair
American Journal Of Sports Medicine...volume 32 #1..2004.page 915

"More than 700 patients had been treated with autologous chondrocyte transplantation by our group by the end of 1999. More than 400 of these patients had been observed for 2 years or more, and the group of patients whose treatment outcome had been evaluated over a long term [5 to 10 years] numbered more than 60."

".....51 of 61 patients had good or excellent results at 5 to 11 years later."

"Autologous chondrocyte transplantation for the treatment of articular cartilage injuries has a durable outcome....."
L. Peterson, et.al.....2002
Autologous Chondrocyte Transplantation
The American Journal Of Sports Medicine.....Volume 30 #1.....2002.....page 2

"In 1987, Las Peterson, University of Goteborg [Sweden] found that chondrocytes isolated from a patients cartilage, could be grown in vitro and then returned to the site of damage to repair cartilage."

"This technique has been developed by Genzyme Tissue Repair [Boston, Massachusetts] as the Carticel Cell Culturing Service."
J. Fricker
Cartilage Transplantation: An End To Creaky Knees?
The Lancet....Volume 352..October 10, 1998

"A new 1-step method that does not require cartilage cells to be grown outside the body has been shown to be effective in repairing injured and arthritic knee joints."
R.Voelker.....March 1997
Journal Of The American Medical Association.....Volume 277 #12....March 26, 1997.....page 951

".....a U.S. Food and Drug Administration advisory committee agreed that a procedure to replace damaged knee cartilage was of clinical benefit, paving the way for approval of Carticel, a proprietary system to culture a patients own cartilage cells to replace worn-out knee cartilage. According to data presented to the FDA, 85% of U.S. patients treated with the Carticel, had improved at 12 months."
The Lancet.....Volume 349.....March 15, 1997....page 780

[excerpts from KXAN.com, local Austin NBC station]...
A new medical breakthrough is bringing hope to people with chronic joint pain. For the first time ever in Austin, a patient's own cells have been used to repair cartilege injuries. Seaquist is the first Austin orthopedic surgeon to use a biologic product called Carticel.

The surgeon takes a small biopsy of healthy cartilage. In a lab the cells are grown until there are enough to repair the defect.

"Over the next 25 years, the major focus in orthopedics will be on cartilege repair, regeneration and restoration. In response to the expected demand Seton Medical Center this month will be opening a brand new Bone and Joint Center," Seaquist said,

"We're trying to develop a center of excellence, that is as good as any place in the country, and we do quite well now, and hopefully we'll improve that and really get on the cutting edge."

[excerpts from..Healthy Cartilage Grown To Replace Damaged Cells
By: Emily Schmitz - News 8 Austin, 2/11/2004].....

In Ragsdale's first surgery, orthopedic surgeon Dr. Jack Seaquist, of the Seton Bone and Joint Center, cleaned out the floating pieces of tissue. Then he did something revolutionary.

He used Ragsdale's own healthy cartilage cells to replace the damaged ones in a procedure called Carticel.

Here's how Carticel works: First Seaquist takes a biopsy of healthy cartilage. Then he sends it to a facility where the cells are cultured and grown for about five weeks. Once those cells have matured and multiplied, Seaquist injects them back into the knee to replace the damaged cartilage.

"We're taking these person's own cells so there's no chance of rejection or anything like that," Seaquist said.

Dr. Jack Seaquest [454-4561]
Medical Park Tower [1301 W 38th Street, Austin, Texas]
Jack L. Seaquist, M.D. was the first physician in the Austin area to perform the breakthrough surgery using Carticel.

"The 3-year randomised placebo-controlled trial suggests that an oral agent, glucosamine sulphate, retards the progression of symptomatic knee osteo-arthritis. The study is a landmark in osteo-arthritis research...."

"The idea that glucosamine has such effects originates from the notion that consumption of cartilage derivatives could provide substrates for cartilage repair....."

".....oral glucosamine sulphate is absorbed and distributed to joint tissues, and that it has.....anabolic properties."
T.McAlindon.....January 2001
Glucosamine For Osteo-arthritis: Dawn Of A New Era
The Lancet.....Volume 357....January 27, 2001.....page 247

As we've known for several years, its -not- the knee injury or low blood supply to meniscus or ACL that prevents healing. Its -not- the injury that sends you down the road to osteo-arthritis.

Its the anti-inflammatories, its the ice, its the type of surgery you choose to have [ie. traditional knee surgery] that prevents healing and advances you down the road to osteo-arthritis.

And now we can add to the list, the type of anesthetic used during the surgery.....

"Recent basic science studies have demonstrated local anesthetic chondro-toxicity in vivo and in vitro in both human and animal cartilage. Clinically, chondrolysis associated with the use of intra-articular local anesthetic pain pumps has been described by several groups. This has raised concern regarding the clinical use of intra-articular local anesthetics."

"The authors undertook a review of the current orthopaedic literature on local anesthetic chondrotoxicity and its potential relationship to clinical chondrolysis."

"Local anesthetics such as bupivacaine, lidocaine, and ropivacaine are chondo-troxic to human articular cartilage in vitro, although ropivacaine is less so. The evidence suggests that there is a greater risk for chondrolysis with a longer exposure to a higher concentration of local anesthetic, such as with a pain pump, than with a single injection. However, late cellular and metabolic changes are seen after even a single injection of bupivacaine in animal models, and the loss of an intact cartilage matrix also leads to more extensive chondrocyte death. Some studies suggest that additives and the pH of the local anesthetic solution may also play a role in chondrotoxicity."

"Intra-articular local anesthetics should be used with caution, especially continuous infusions of bupivacaine and lidocaine at high concentrations in joints with compromised cartilage. The consequences of a single intra-articular injection of local anesthetic remains unclear and requires further investigation. Clinical Relevance: Intra-articular use of local anesthetics may have lasting detrimental effects on human articular cartilage and chondrocytes, although the clinical relationship between local anesthetic exposure and chondrolysis requires further study."
S.L. Piper, et al
Effects of Local Anesthetics on Articular Cartilage
American Journal Of Sports Medicine.....Volume 39 #10....October 2011....page 2245 - 2253

"Knee arthroscopy is one of the most common orthopaedic procedures performed in the United States. The publication of a randomized controlled trial of arthroscopy versus sham surgery by Moseley et al in 2002 showed no efficacy and challenged the role of arthroscopy for the treatment of osteoarthritis."

"The authors examined the American Board of Orthopaedic Surgery database that includes 6-month case logs for each examinee sitting for the Part II board examination for 1999 to 2009. Knee arthroscopy cases were identified by Current Procedural Terminology code and knee osteoarthritis diagnosis was defined by International Classification of Diseases, 9th Revision code. Piecewise linear regression was used to evaluate knee arthroscopy before and after the publication of the Moseley et al article in 2002."

"Knee arthroscopy for patients with osteoarthritis among orthopaedic surgeons during their ABOS examination case collection period has decreased after the publication of a highly publicized article demonstrating a lack of efficacy of this procedure. Further study is needed to determine if this change occurred in the orthopaedic community at large or if practice patterns only changed for surgeons during their board collection periods. Randomized controlled trials can be effective in changing orthopaedic surgeon practice."
A.Potts, et al
Practice Patterns for Arthroscopy of Osteoarthritis of the Knee in the United States
American Journal Of Sports Meicine.....Volume 40 36.....June 2012....page 1247 - 1251

"We evaluated the effect of cold ice-pack application following a brief sprint-interval training on the balance between anabolic mediators [growth hormone, insulin-like growth factor-I, testosterone], catabolic markers (cortisol, IGFBP-1, and circulating pro [Interlukin-6 and IL-1?]- and anti-inflammatory cytokines [IL-1 receptor antagonist]."

"Twelve males, elite junior handball players performed 4 × 250 m treadmill run, at 80% of each individual's maximal speed, followed by a rest period with and without local cold-pack application."

"Local cold-pack application was associated with significant decreases in IL-1?, IL-1ra, IGF-I, and IGFBP-3 and a greater increase of IGFBP-1 during recovery."

"Local ice therapy immediately following sprint-interval training was associated with greater decreases....anabolic hormones supporting some clinical evidence for possible negative effects on athletic performance."
D.Nemet, et al
Effect of local cold-pack application on systemic anabolic and inflammatory response to sprint-interval training: a prospective comparative trial
European Journal of Applied Physiology.....Volume 107 #4....November 2009....page 411 - 417

Comparative effectiveness research

osteo-arthritis in knees

platelet-rich plasma -vs- corticosteroid injection…….

“Evidence on the effect of platelet-rich plasma in treating osteoarthritis is insufficient. Therefore, the present study compares the effects of a one-time injection of platelet-rich plasma and corticosteroid”.

“In the present randomized double blind clinical trial, the participants who suffered from knee osteoarthritis (Grades II/III), were randomly divided into two groups: intra articular injection of platelet-rich plasma and corticosteroid.”

“….assessed before, 2-months, and 6-months after interventions.”

“41 participants (48 knees) were involved in the research (66.7% women; average age of 61.1±7.0 years old). Compared to the group treated with corticosteroid, pain relief, symptom free, activities of daily living and quality of life in the platelet-rich plasma group were significantly higher….”

“Platelet-rich plasma was significantly more helpful for relieving patients’ pain compared to corticosteroids.”

“Our study demonstrated that one shot of platelet-rich plasma injection, decreased joint pain more and longer-term, alleviated the symptoms, and enhanced the activity of daily living and quality of life in short-term duration in comparison with corticosteroid.”

B. Forogh, et al
Effect of single injection of platelet-rich plasma in comparison with corticosteroid on knee osteoarthritis: a double-blind randomized clinical trial
The Journal of Sports Medicine and Physical Fitness — Volume 56 #7&8 — July-August 2016 — page 901

So called "performance enhancing drugs" <u>are prescription drugs</u>.

Some examples of the effectiveness of prescription drugs in sport.....

"The drug erythropoietin, often called EPO.....a new systemic review of existing research reveals that **<u>there is no scientific evidence that it does enhance performance</u>**, but there is evidence that using it in sport could place a user's health and life at risk."
EPO [erythropoietin] doping in elite cycling: No evidence of benefit, but risk of harm
Science Daily.....December 5, 2012.

"....**<u>there is no scientific basis from which to conclude that rHuEPO has performance-enhancing properties</u>** in elite cyclists.""The use of rHuEPO in cycling is rife but scientifically unsupported by evidence, and its use in sports is medical malpractice."
J.A.Heuberger, et al
Erythropoietin doping in cycling: lack of evidence for efficacy and a negative risk-benefit.
British Journal Of Clinical Pharmacology.....Volume 75 #6....June 2013...page 1406

"The **<u>over-exaggeration of the effects of growth hormone</u>** in muscle building is effectively promoting its abuse...."
"....there is the question of disinformation on rhGH....Part of this problem may, paradoxically, derive from the anti-doping authorities themselves. By ignoring the evidence the **<u>rhGH does not work</u>** in normal healthy subjects, the athletic establishment could be accused of effectively promoting its use."
"**<u>We must tell athletes the truth: growth hormone does not 'work'</u>** or at least not as they think it does and that its is associatedwith all kinds of immediate and long term hazards-----everything from decreased performance to cancer."
"....none of us scientists, doctors, coaches, or sports bodies should continue to suggest that this dangerous doping practice works."
M.J. Rennie
British Journal Of Sports Medicine.....Volume 37 #2....April 2003....pages 100-103

"**<u>Testosterone prohormones</u>** such as androstenedione, androstenediol, and dehydroepiandrosterone (DHEA) have been heavily marketed as testosterone-enhancing and muscle-building nutritional supplements for the past decade."
"Contrary to marketing claims, research to date indicates that the use of prohormone nutritional supplements (DHEA, androstenedione, androstenediol, and other steroid hormone supplements) **<u>does not produce either anabolic or ergogenic</u>** effects in men. Moreover, the use of prohormone nutritional supplements may raise the risk for negative health consequences."
G.A.Brown, et al
Testosterone Prohormone Supplements.
Medicine & Science in Sports & Exercise.....Volume 38 #8....August 2006.....pg 1367-1537

So called "performance enhancing drugs" <u>are prescription drugs</u>.

Some examples of the effectiveness of prescription drugs in American medicine & health care.....

"Most drugs are only effective **<u>for a small percentage</u>** of people who take them."
Michael Leavitt [U.S. Secretary of Health & Human Services 2005 - 2009]

".....the benefits that US health care currently deliver **<u>may not outweigh the aggregate health harm</u>** it imparts."
Journal Of The American Medical Association...Volume 302 #1..July 1, 2009...page 89 - 91

"It is estimated that more than 700,000 individuals are seen in hospital emergency departments for adverse drug events each year in the United States."
[Centers For Disease Control....2015]

"106,000 deaths/year **<u>from non-error</u>**, adverse effects of medications"
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".....1.5 million U.S. residents are harmed or killed each year because of medication errors, according to an Institute of Medicine report."
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