Exercise Addiction in Athletes
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“Wellness 5”

- Exercise
- Sleep
- Nutrition
- Mental Health
- Substance Abuse
Osteopathic Medicine

- The body is a unit.
- The body possesses self regulatory mechanisms.
- Structure and function are reciprocally interrelated.
- Rational therapy is based upon an understanding of body unity, self regulatory mechanisms, and the inter-relationship of structure and function.
Too Much?

- Over Exercise
- Exercise Addiction
- Exercise Dependence
- Exercise Abuse
- Athletica Nervosa
- Anorexia Athletica
- Hypergymnasia
- Compulsive Athleticism
- Obligatory Exercise
- Compulsive Exercising
Goals

At the end of this presentation the participant will have:

• 1) an increased awareness of Exercise Addiction in Athletes.
• 2) Knowledge of the Current Literature
• 3) Capability of identifying signs, symptoms and diagnosing those athletes at risk
• 4) Suggested Treatment, Prognosis and Return to Play guidelines for those afflicted.
Questions?

• Is there such a thing as too much exercise?
• Should we leave athletes to their own demise?
• Too Much vs. Too Little Exercise?
• Patients have a right to be wrong!
• Addiction vs. Fanaticism vs. Passion
• DSM IV ....Diagnosis vs. Disorder
• Insurability?
• Health Risks?
Why We Exercise

• Weight loss
• Build endurance
• Build muscle
• Build strength
• Cardio protective
• Appearance
• Competition
• Stress Reduction
• Compulsion..........
Addictions
Exercise, Sex, Gambling, Internet

- Salience: Preoccupation
- Mood: Buzz
- Tolerance: More
- Dependence: Habit
- Withdrawal: Agitation
- Conflict: Family and Friends
- Relapse: Recidivism

Terry et al
Triathletes

- Power
- Passion
- Speed
- Endurance
- Strength
- Preparation
- Determination
- Perseverance
- Dedication
Signs of Over Exercising

Commitment becomes a compulsion
Loss of Perspective

Attitude Deterioration

Loss of Balance
History

• Coined in the 1990s for athletes who exhibited partial anorexic behaviors without a full-blown eating disorder
• A continuum with anorexia nervosa
• Both conditions have excessive concern of body shape
• The coaches may have an influence
• 8% of Gym Users
• Too Much
• Too Often
• Too Hard
• Too Fast
• Too Soon
The Female Athlete Tetrad

- DISORDERRED EATING  15-62%
- AMENORHEA  3.4-66%
- OSTEOPEROSIS  (Drinkwater)
- ENDOTHELIAL DYSFUNCTION
Stress Injury
Risks similar to AN

![Anorexia affects your whole body diagram](image_url)

- **Brain and Nerves**
  - can't think right, fear of gaining weight, sad, moody, irritable, bad memory, blaming, changes in brain chemistry

- **Hair**
  - hair thins and gets brittle

- **Heart**
  - low blood pressure, slow heart rate, fluttering of the heart (palpitations), heart failure

- **Blood**
  - anemia and other blood problems

- **Muscles and Joints**
  - weak muscles, swollen joints, fractures, osteoporosis

- **Kidneys**
  - kidney stones, kidney failure

- **Body Fluids**
  - low potassium, magnesium, and sodium

- **Intestines**
  - constipation, bleeding

- **Hormones**
  - periods stop, bone loss, problems growing, trouble getting pregnant, if pregnant, higher risk for miscarriage, having a C-section, baby with low birthweight, and postpartum depression

- **Skin**
  - itchy easily, dry skin, growth of fine hair all over body, get cold easily, yellow skin, nails get brittle
Definition

• Defined as athletes with eating disorder symptoms that engage in compulsive exercise
• Athlete does not usually enjoy exercise, but is driven by sport specific achievement
• Common in sports that emphasize the importance of a lean physique
  – Gymnastics, long distance running, ski jumping, cycling
• Not defined in the DSM-IV
• Not a Diagnosis but a Disorder
Definition

✧ Athletes usually prioritize exercise over social events, family gatherings
✧ Often ignore injury or weather barriers
✧ Can feel guilty if not exercising
✧ Usually starts with healthy eating and exercising with good results
Exercise Addiction

Primary
Men
Self Actualized/ Self Affirmation/Control/Achievement
Endorphin High (Bodies Natural Opiate/Pain Killer)
Obsession
Withdrawal
Tolerance

Secondary
Women
Anorexia
Image
Mechanism

• Psychological personality type
• Physiologic Beta-endorphins dependence

• Adherence=Dependence=Addiction
Risk Factors

- Anyone with AN or BN
- Other Addictions
- Type A, Driven Personality/Fanatic
- Distorted Body Image
- Adolescent stressors
- Physique driven sports/
- Mood disorders/Loner
Signs of Over Exercising

- Decrease in performance “Overtraining Syndrome”
- Disinterest in exercise
- Mood Changes
- Delayed recovery time
- Increased Heart Rate
- Fatigue
- Insomnia
- Diminished appetite
- Fat Gain
- Weak Immune System
- Exercising When Ill
- Stress and anxiety if missed workout
- Missed family gatherings because of exercise
Signs and Symptoms

- Exercising more than is good for our health.
- Being fanatical about weight and diet.
- Friends and Family addressing concern
- Taking time off work, school and relationships to exercise.
- Avoiding social activities in favor of exercise
- Frequently Exercising Alone
- Experience withdrawal when not exercising
- Focusing on the challenge exercise poses and forgetting that it can be fun.
- Believing that self-worth depends on our physical performance.
- Rarely being satisfied by what is achieved physically.
- Saying that this exercise is okay because we are athletes, or insisting that the behavior is healthy
Signs

• Exercising Several Hours Daily /Too Long and Too intensely
• Exercising when ill, tired or injured
• Like to exercise over sex, good food, movies
• Agitated or angry when they can’t exercise
• Overly focused on appearance
• Overly critical of oneself
• Amenorrhea
• Overuse Injuries
Denial
Defeating Anorexia Athletica

One woman's journey through exercise 'addiction' and beyond

Marion Maclean
Physical Findings

- Thin
- Obsessive
- Personality Type A
- Stoic but Fastidious

- Stress Fractures
- Overuse injuries
Medical Complications

• Fluid, electrolyte and energy imbalance
• Over usage Injuries: Stress Fractures, Compartment Syndromes, Achilles, Groin, Fasciitis
• Lithiasis, Anemia, Insomnia, Depression
• Malnutrition impairs judgment, promote brittle bones and metabolic imbalances.
• Compulsion to exercise can interfere with treatment which needs structure and support.
Treatment

• The most difficult part is making the athlete realize their exercising is a problem
• Family physician, psychiatrist, dietician, personal trainer
• Athlete can go to an eating disorder facility

NEDANationalEatingDisorders.org
Treatment

- Rest/Reduce training regimen
- Psychotherapy/Psychotropics
- Intervention
- Stress Reduction
- Nutritional Counseling
- Injury Treatment
- Physical therapy
- “Mind, Body and Spirit” Integrative
- Acknowledge
• Avoid Peer Pressure/ New friends with different interests
• Relaxation Techniques  Yoga  Meditation
• Cross Train and Enjoy Diverse Activities
Prognosis

• Recovery without treatment is unlikely
• Athlete can become isolated
• The athlete can deteriorate mentally and physically
• Performance declines leading to greater pressure on athlete
• Exercise is the coping mechanism
Long-term risks

• Increased risk of osteoporosis due to decreased estrogen
• Low protein intake can also deplete iron stores, causing anemia
• Long term anemia leads to hypoxemia and increased risk of heart attack
• Can lead to depression
Case Studies
Case #1

- All American Cross Country Freshman Female
- Hospitalized in HS for AN
- Tries to run to Chicago from South Bend at 2am (92 miles)
Case #2

- MSIII Medical Student finishes 63rd Boston Marathon
- Fractures left rib 10 at mile 25/26
- Previous Sacral Stress fracture
- Subsequent gross hematuria
- Seven Calcium Oxalate renal lithiasis
Diagnostic Instruments

- Multiple Addictive Behavior Questionnaire (MABQ) Bacon & Lee 1997 (Gambling, Substance Eating, Exercise, Etoh Abuse)
- Exercise Addiction Questionnaire Benyo 1990
- Running Addiction Scale Rudy & Estok 1989
- The Exercise Addiction Inventory Terry 2005
THE EXERCISE ADDICTION INVENTORY

Exercise is the most important think in my life (SALIENCE)
Disagree Agree
1 2 3 4 5

Conflicts have arisen between me and my family and/or my partner about the amount of exercise (CONFLICT)
I do
1 2 3 4 5

I use exercise as a way of changing my mood (e.g. to get a buzz, to escape etc.) (MOOD MODIFICATION)
1 2 3 4 5

Over time I have increased the amount of exercise I do in a day (TOLERANCE)
1 2 3 4 5

If I have to miss an exercise session I feel moody and irritable (WITHDRAWAL)
1 2 3 4 5

If I cut down the amount of exercise I do, and then start again, I always end up exercising as often as I did before (RELAPSE)
1 2 3 4 5

Terry et al >24 AT RISK
Athletes

• Commitment becomes a compulsion
• Loss of Perspective
• Attitude Deterioration
• Loss of Balance
References

• Adams J “Excessive Exercise as an Addiction” Addiction Research and Theory 2002
• Warner R “A Qualitative Thematic Analysis of Exercise Addiction” Int Journal of Mental Health Addiction 2006
• Maclean M “Defeating Exercise Addiction”
• Grant E “The Exercise Fix” Psychology Today 1988
• Annett J “Exercise Addiction” British Psych 1995
What is the minimum score on the Exercise Addiction Inventory that is suggestive of exercise addiction?
28
24
20
18

Exercise addiction is defined as excessive exercise in association with:
substance abuse
aggressive personality
eating disorder symptoms
college athletics

Which of the following is not a sign on exercise addiction?
decrease in performance
insomnia
avoiding social activities in favor of exercise
satisfaction with physical performance

Risk factors for exercise addiction are:
substance abuse
mood disorders
Type A personality
All of the above
Inability to cope well with stress, poor lifestyle choices, such as tobacco abuse, and lack of exercise may induce dysfunctions in any of the body's systems.

Andrew Taylor Still
Table I. Criteria for anorexia athletica (after Sundgot-Borgen, *1993, 1996*).

Common features
1. Weight loss (>5% of expected body weight) (+)

2. Delayed puberty (no menstrual bleeding at age 16) (+)

3. Menstrual dysfunction (primary, secondary amenorrhoea, oligomenorrhoea) (+)

4. Gastrointestinal complaints +

5. Absence of medical illness or affective disorder explaining weight reduction +

6. Disturbance in body image (+)

7. Excessive fear of becoming obese +

8. Restriction of caloric intake (<1200 kcal · day⁻¹) +

9. Use of purging methods (self-induced vomiting, laxatives, diuretics) (+)

10. Binge eating (+)

11. Compulsive exercising (+)

Note: +, Criteria that have to be met. (+), Relative criteria, one or more can be met.