

Exercise Promotion in Clinical Practice

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Outline

I. The Rationale

At the beginning of the chapter on Physical Activity and Fitness in Healthy People 2010 (Washington, DC: US Department of Health and Human Services, Conference Edition, in two volumes, Jan. 2000), it is stated that (vol. 2, p. 22-1):

“Research has demonstrated that virtually all individuals will benefit from regular physical activity. . . . [M]oderate physical activity can reduce substantially the risk of developing or dying from heart disease, diabetes, colon cancer, and high blood pressure. Physical activity may also protect against lower back pain and some [other] forms of cancer (for example, breast cancer). On average, physically active people outlive those who are inactive. Regular physical activity also helps to maintain the functional independence of older adults and enhances the quality of life for people of all ages.”

The 2004 “Best Practices Statement” of the American College of Sports Medicine (Cress, M.E., et al, “Physical Activity Programs and Behavior Counseling in Older Adult Populations,” Medicine and Science in Sports & Exercise, 2004, pp. 1997-2003) states:

“Physical activity offers one of the greatest opportunities for people to extend years of active independent life and reduce functional limitations. . . . A substantial body of scientific evidence that indicates regular physical activity can bring dramatic health benefits to people of all ages and abilities, with these benefits extending over the lifespan. Physical activity offers one of the greatest opportunities to extend years of active independent life, reduce disability, and improve the quality of life”

The position taken in both of these reports was shaped by four important developments that have taken place over the past half-century (Paffenbarger, R.S., “An Introduction to the Journal of Physical Activity and Health, “Journal, 1, 1-3, 2004). First, the biomedical community identified and clearly described those aspects of physical fitness that are related to health. Second, the scientific knowledge base underlying the original hypothesis that regular physical activity benefits health became firmly established. Third, the epidemiology of physical activity (and inactivity) undertaken by the U.S. population and others has been studied and described in increasing detail over the years. Fourth, it has been recognized that moderate, as well as intense, physical activity carries with it health benefits.

Back in 1996, in terms that remain most apt to this day, Dr. Audrey F. Manley, then Acting Surgeon General, said (Preface to Physical Activity and Health: A Report of the

Surgeon General (Atlanta, GA: USDHHS, CDCP, National Center for Chronic Disease Prevention and Health Promotion, 1996):

“We must get serious about improving the health of the nation by affirming our commitment to healthy physical activity on all levels: personal, family, community, organizational, and national. Because physical activity is so directly related to preventing disease and premature death and to maintaining a high quality of life, we must accord it the same level of attention that we give to other important health practices that affect the entire nation.”

A major challenge is how to use all of our knowledge and understanding to actually help patients/clients become regular exercisers at a level that is both comfortable for and useful to them. It is well-known that clinical advice of the appropriate type, provided in an appropriate way by physicians and other clinical health care professionals, can help patients/clients to unleash their own motivational process to become regular exercisers. This presentation contains some thoughts about how to go about doing this task effectively.

A full, broad-based approach to that challenge is contained in the American College of Sports Medicine's Exercise is Medicine® program. With my colleague Edward Phillips, Director of the Institute of Lifestyle Medicine at Harvard, I was privileged to write textbook for the program (see Resources, below).

In 2007 the original “Exercise is Medicine® Task Force” set forth the Vision of the enterprise as follows (<http://www.exerciseismedicine.org/about.htm>) :

“To make physical activity and exercise a standard part of a disease prevention and treatment medical paradigm in the United States.

“For physical activity to be considered by all healthcare providers as a vital sign in every patient visit, and that patients are effectively counseled and referred as to their physical activity and health needs, thus leading to overall improvement in the public's health and long-term reduction in healthcare cost.

“Exercise Is Medicine® will be a sustainable national initiative that:

- A. Creates broad awareness that exercise is indeed medicine.
- B. Makes ‘level of physical activity’ a standard vital sign question in each patient visit.
- C. Helps physicians and other healthcare providers to become consistently effective in counseling and referring patients as to their physical activity needs.

- D. Leads to policy changes in public and private sectors that support physical activity counseling and referrals in clinical settings.
- E. Produces an expectation among the public and patients that their healthcare providers should and will ask about and prescribe exercise.
- F. Appropriately encourages physicians and other healthcare providers to be physically active themselves.

“The Program Elements as originally laid out were:

- Area 1. Make available tools, training, and referral mechanisms for physicians and other healthcare providers.
- Area 2. Strengthen the science and evidence for the efficacy of exercise prescription in healthcare settings.
- Area 3. Pursue policy interventions that support Exercise is Medicine®.
- Area 4. Stage patient advocacy and marketing campaigns.
- Area 5. Build coalitions and partnerships.
- Area 6. Identify, develop, and disseminate "what works" models for patients as well as entire communities.
- Area 7. Create a Web site with strategy, content, and functions that support all the program elements of Exercise Is Medicine®”

The book is designed specifically to assist physicians and indeed all health care professionals who are interested in helping patients and clients to become regular exercisers in learning how they can most effectively do that. Our book covers the regular exercise waterfront, from helping you to organize your own mind-set for the process, to mobilizing patient/client motivation, which we see as the key element in the whole enterprise, through the nuts and bolts of what to do and how to do it, finishing up with how to have fun as a regular exerciser. We go in depth into both the *lifestyle exercise* approach to exercising regularly and the *structured exercise* approach.

II. Health Promotion and Disease Prevention/Treatment/Management Benefits of Regular Physical Activity

The evidence that demonstrates the health and wellness benefits of regular exercise was considered in great depth by the Physical Activity Guidelines Advisory Committee that reported to the Office of Public Health and Sciences of the US Dept. of Health and Human services in 2008. Their report is contained in the Physical Activity Guidelines Advisory Committee Report, 2008, Washington, DC: US Dept. of Health and Human Services. Their findings are summarized on pp. A-2 to A-4:

A. General

Very strong scientific evidence based on a wide range of well-conducted studies shows that physically active people have higher levels of health-related fitness, a lower risk profile for developing a number of disabling medical conditions, and lower rates of various chronic diseases than do people who are inactive.

B. Children and Youth

Strong evidence demonstrates that the physical fitness and health status of children and youth are substantially enhanced by frequent physical activity. Compared to inactive young people, physically active children and youth have higher levels of cardiorespiratory endurance and muscular strength, and well-documented health benefits include reduced body fatness, more favorable cardiovascular and metabolic disease risk profiles, enhanced bone health, and reduced symptoms of anxiety and depression.

C. Adults and Older Adults

Strong evidence demonstrates that, compared to less active persons, more active men and women have lower rates of all-cause mortality, coronary heart disease, high blood pressure, stroke, type 2 diabetes, metabolic syndrome, colon cancer, breast cancer, and depression. Strong evidence also supports the conclusion that, compared to less active people, physically active adults and older adults exhibit a higher level of cardiorespiratory and muscular fitness, have a healthier body mass and composition, and a biomarker profile that is more favorable for preventing cardiovascular disease and type 2 diabetes and for enhancing bone health. Modest evidence indicates that physically active adults and older adults have better quality sleep and health-related quality of life.

D. Older Adults

In addition to those benefits listed above, strong evidence indicates that being physically active is associated with higher levels of functional health, a lower risk of falling, and better cognitive function.

E. Women During Pregnancy and the Postpartum Period

Strong evidence indicates that moderate-intensity physical activity during pregnancy by generally healthy women increases cardiorespiratory and metabolic fitness without increasing the risk of low birth weight, preterm delivery, or early pregnancy loss. Moderate intensity physical activity during the postpartum period does not appear to adversely affect milk volume or composition or infant growth. Physical activity alone does not produce weight loss in postpartum women except when combined with dietary changes.

F. Persons With Disabilities

For many physical and cognitive disabilities, scientific evidence for various health and fitness outcomes is still limited due to the lack of research. Moderate to strong evidence indicates that increases in aerobic exercise improve cardiorespiratory fitness in individuals with lower limb loss, multiple sclerosis, stroke, spinal cord injury, and mental illness. Limited data show similar results for people with cerebral palsy, muscular dystrophy, and Alzheimer's disease. Moderate to strong evidence also exists for improvements in walking speed and walking distance in patients with stroke, multiple sclerosis, and intellectual disabilities. Moderately strong evidence indicates that resistance exercise training improves muscular strength in persons with such conditions as stroke, multiple sclerosis, cerebral palsy, spinal cord injury, and intellectual disability. Although evidence of benefit is suggestive for such outcomes as flexibility, atherogenic lipids, bone mineral density, and quality of life, the data are still very limited.

G. Persons Who Are Overweight or Obese

Strong evidence shows that physically active adults who are overweight or obese experience a variety of health benefits that are generally similar to those observed in people of optimal body weight (body mass index [BMI] = 18.5-24.9). These benefits include lower rates of all-cause mortality, coronary heart disease, hypertension, stroke, type 2 diabetes, colon cancer, and breast cancer. Some of these benefits appear to be independent of a loss in body weight, while in some cases weight loss in conjunction with an increase in physical activity results in even greater benefits. Because of the health benefits of physical activity that are independent of body weight classification,

adults of all sizes and shapes gain health and fitness benefits by being habitually physically active.

III. The Primary Goal of this Exercise on Exercise, as Addressed to the Practitioner

The primary goal of this exercise is to help the clinician develop and implement a plan for incorporating regular exercise promotion into his or her practice. The process of doing so is perhaps best approached by answering a series of questions that the practitioner might ask him or herself at the end of it.

- Is exercise promotion important in my practice, and why? For which patients/clients?
- For any endeavor in this area, what should the goals be, for my patients/clients, for myself, for the practice?
- If I think that there is some stuff to learn here, how much time do I want to invest in doing so, if any? And if not I, then who?
- Who should do the counseling? I? Members of my staff? Somebody new whom I might bring in part-time, like a physical therapist, a sports trainer, or a health educator?
- Whoever does it, how is this function going to be paid for? Do I charge patients/clients for this service? If so, how and how much?
- Do I want to try using patient groups for exercise promotion?
- What about making use of community resources?
- How much time am I willing to invest in developing an exercise promotion component in my practice?
- Is role-modeling important for patients/clients? If so, by whom? Do I want to invest my personal time in this?
- In terms of the specifics, how should I go about learning them, incorporating them into my own base of knowledge and skills?
- Considering key concepts: “Should” should not be used; patient/client “choices” should be central; “mobilizing motivation” is the first objective (see IV, below); time availability and/or lack thereof must be recognized; “the hard part of regular exercise is the regular, not the exercise”; Rome wasn’t built in a day and neither is permanent lifestyle change.

IV. The Program: First Thoughts

- A. The focus of this session is on the otherwise healthy patient:
 - 1. The sedentary person who wants to become a regular exerciser.
 - 2. The sedentary person who needs to become a regular exerciser for risk factor modification.
 - 3. The former or present regular exerciser who is looking for special consultation, because of injury or burnout, or is in need of re-focusing/reinforcement.

- B. Why use the word “recommendation” rather than “prescription?”
 - 1. The permanent time-intrusiveness of regular exercise and the need to recognize that reality. Because of its special nature among the set of health-promotive/disease-preventive interventions, regular exercise cannot be prescribed like a drug.
 - 2. The need to spend some time with the patient just talking, discussing pros and cons, defining both facilitating and limiting factors, especially recognizing barriers, to help patients/clients equip themselves with the tools to use the facilitating factors and breach the barriers.

- C. For almost everyone, the hard part of regular exercise is the “regular,” not the “exercise.” This therefore ought to be a principal focus in counseling patients, both those starting out, and also those who are staying with it.

V. The Ordinary Mortals ® Pathway to Mobilizing Motivation

- A. The first step is assessment, of self, of the situation or other person being addressed, or both.

- B. Next is to define success, in context, realistically, so that it is at least within the realm of possibility.

- C. The third step is goal-setting, the central element of the Wellness pathway. All the rest is commentary.

- D. The fourth step is establishing priorities.
- E. The fifth step is taking control.
- F. The keys to taking control: how patients/clients can overcome their internal barriers to becoming a regular exerciser.
 - 1. Understanding that motivation is not a thing, but a process that links a thought to a feeling with an action.
 - 2. Following the first four steps of the Wellness Motivational Process from the beginning.
 - 3. Examining what one already does well; health-promoting behavioral changes already made.
 - 4. Recognizing that gradual change leads to permanent changes.
 - 5. Dealing with the fear both of failure and of success.
 - 6. The readiness to explore one's limits while recognizing one's limitations.
 - 7. Appreciating the process of psychological immediate gratification.

VI. Choosing the activities/sport (s). (See Appendix I for suggested readings describing some of the options.)

- A. The choice of sports is extensive.
 - 1. Skill/non-skill
 - 2. Outdoor, aerobic
 - 3. Indoor, aerobic
 - 4. Non-aerobic
 - 5. Weight-training
 - 6. Team
- B. Very important: different strokes for different folks; one size does not fit all. Thus, choosing what works, what the person likes: "The best exercise for you is the exercise that's best for you."

- C. Aerobic and non-aerobic exercise: what each does and does not do for the exerciser.
- D. The “Lifestyle” approach (building physical activity into the regular patterns of daily living) vs. the “Scheduled Leisure Time Workout” approach. The advantages and disadvantages of each.

VII. Making exercise fun

- A. Letting it be fun: the importance of positive anticipation
- B. Setting appropriate goals.
- C. Not doing too much, too soon.
- D. Minutes, not miles.
- E. Private time, thinking time.
- F. Routes and companions.
- G. Listening to music or the news on the radio, to books courses on tape; safety considerations.
- H. Setting non-exercise related goals for the workout, like getting an errand or two done in the course of it.
- I. Giving oneself a reward periodically.
- J. Seasonal variation.
- K. Enjoying the rhythm that is part of many aerobic sports.
- L. Enjoying the outdoors.
- M. Exercising while traveling.
- N. Racing.
- O. Taking time off when needed, but in any case at least 1-2 times/year.

VIII. The Generic Training Program: Primary Elements

- A. The **first** focus **must** be on the regular, **not** the exercise.
- B. Time: 4-5 days per week for a total of 2.5 hrs. or more (see the new DHHS Physical Activity Guidelines).
- C. Walking as what I call the FAST: Foundation Aerobic SporT.
- D. Minutes not miles.
- E. Heart rate and/or "perceived exertion," not speed, as measures of intensity.
- F. The importance of consistency and regularity.
- G. Workout schedules (see Appendix II).

IX. Technique and Equipment

- A. On technique, it is hardly necessary to be an expert in all sports, or even one. Familiarity with one or more good books and magazines in the most popular sports will be very helpful (see Appendix I).
- B. On equipment, the shoe is the most important piece of equipment for many of the aerobic sports. A good shoe is essential to safe, enjoyable participation in them. Understanding shoes and what good fit is, is very helpful for patients/clients.
- C. Thus: the shoe should be shaped like one's foot; it should touch the foot in as many places as possible, except over the toes; it should be flexible under the ball of the foot; it should have a firm heel counter, to keep the heel down in the shoe.
- D. While the non-specific "cross-trainer" can be fine for someone starting out and not knowing for sure what sport they will engage in, once one or more sports are selected, sport-specific shoes are recommended. The cross trainer will work, of course, for the gym, and, for most people, if well-fitted, for exercise walking. However, in most cases, the shoe selected should be specific to the sport selected.
- E. Appreciate and recommend the "pro shop" for specialty items like running shoes, bikes and bike-equipment, and home exercise and weight-lifting machines. Purchasing any kind of sports equipment in department stores, generic discount houses, or even sports "super-stores," in which the quality of the help can be very uneven, is not recommended.

X. The importance of role-modeling.

- A. Although not essential, setting an example is very helpful.
- B. Being able to talk from experience: knowing both the benefits and the difficulties of being a regular exerciser.
- C. Being able to share sport-specific experience and experiences.

XI. The Use of Community Resources

- A. What they are: health clubs, gyms, pools, tracks, bike routes walking/running trails, courts, sports clubs, pro shops.
- B. Spend some time learning about/evaluating them, saving much time for yourself in your practice while providing substantive assistance for your patients/clients.
- C. Consider setting up formal referral relationships with one or more community resources, as appropriate.

XII. The Essentials of Exercise Counseling

- A. The exercise counseling process as a partnership, not paternalism. The importance of interactive communication. Empowering the patient. Raising questions, not necessarily giving answers.
- B. Using the Wellness Motivational Process for Healthy Living in an active mode with patients/clients.
- C. The centrality of internal motivation.
- D. The importance to the patient of commitment and scheduling.
- E. The three M's: mentioning, modeling, motivating.
- F. What to emphasize, of the possible outcomes.
 - 1. Learning to, and being able to, take control.
 - 2. Self-realization; discovering previously unknown aspects of oneself.
 - 3. Feeling good now.

4. Weight and/or fat loss/physical appearance improvement.
5. Health benefits.

XIII. The Problem for the Clinician: How to reduce all of this material to a package that can be successfully used in clinical practice; some options.

- A. First decide if doing that is important to you and for your patients/clients. It's the same goal-setting process that the successful regular exerciser undertakes as the first step. Use the question list on p. 3 above.
- B. Offering individual counseling for a fee.
- C. Setting up evening groups.
- D. Using written materials.
- E. Using community resources.

XIV. Current Primary Resources

General:

1. Jonas, S. and Phillips, E., ACSM's Exercise is Medicine®: The Clinician's Guide to Exercise Prescription, the official textbook for the American College of Sports Medicine's national "EIM ®" program. Philadelphia, PA: Lippincott Williams and Wilkins, 2009.
2. US Dept. of Health and Human Services, 2008 Physical Activity Guidelines for Americans, www.health.gov/paguidelines.
3. Wolf, S.H., Jonas, S., and Lawrence, R.S., Health Promotion and Disease Prevention in Clinical Practice, 2nd ed. (see esp. Chap. 6). Philadelphia, PA: Lippincott, Williams and Wilkins, 2008.
4. Jonas, S., Talking About Health and Wellness With Patients: Integrating Health Promotion and Disease Prevention into Your Practice. New York: Springer Publishing Co., 2000.
5. American College of Sports Medicine, ACSM Fitness Book, Third Edition, Champaign, IL: Human Kinetics, 2003.

Appendix I
(Updated, 2012)

A listing of suggested readings on regular exercise for you and your patients

1. Publications from the ISC Division of Wellness

Leslie Knight, Strength Training for Preventive Medicine, ISC Division of Wellness, 2010

Leslie Knight, Concepts of Heart Rate Monitor, ISC Division of Wellness, 2007

Leslie Knight, Concepts of Dehydration, ISC Division of Wellness, 2007

Leslie Knight, Concepts of Nutrition, ISC Division of Wellness, 2007

Leslie Knight, Balanced Nutrition Plan, Sixth Edition, ISC Division of Wellness, 2006

Leslie Knight, Lactate and Exercise, ISC Division of Wellness, ISC 2005

Matthew Werd and Leslie Knight, Eds., Athletic Footwear and Orthoses in Sports Medicine, New York, Heidelberg: Springer, 2010.

Leslie Knight and Matthew Werd, Concepts of Stretching: 3-Minute Stretching Program, ISC Division of Wellness, 2009.

Matthew Werd and Leslie Knight, Foot Care, Prevention and Treatment, ISC Division of Wellness, 2004.

These books may all be ordered directly from the:

ISC Division of Wellness, PO Box 8798, Lakeland, FL 33806, tel. 1-800-477-8934

2. On Fitness in General

Ardell, D., Aging Beyond Belief: 69 Tips for REAL Wellness, Duluth, MN: Whole Person Associates, 2007.

Bushman, B., ed., American College of Sports Medicine, ACSM's Complete Guide to Fitness and Health, Champaign, IL: Human Kinetics, 2011.

Nieman, D.C., The Exercise-Health Connection, Champaign, IL: Human Kinetics, 1998.

Price, J., The Anytime, Anywhere Exercise Book: 300-plus Quick and Easy Exercises You Can Do Whenever You Want, Avon, MA: Adams Media Corp., 2003.

Sharkey, B.J., et al, Fitness & Health, 6th ed., Champaign, IL: Human Kinetics, 2007.

3. Running.

Averbuch, G. New York Road Runners Complete Book of Running and Fitness, 4th ed., 2004

Brown, R.L. with Joe Henderson, Fitness Running, 2nd ed., Champaign, IL: Human Kinetics, 2003.

Burfoot, A., Runner's World Complete Book of Beginning Running, Emmaus, PA: Rodale Press, 2005.

Fixx, J., The Complete Book of Running, New York: Random House, 1977.

Galloway, J., Galloway's Book on Running 2nd ed., Bolinas, CA: Shelter Books, 2002.

Glover, B., Shepherd, J., and Glover, S-L. F., The Runner's Handbook, New York: Penguin, 1996.

Glover, S-L. F. and Glover, B., The Competitive Runner's Handbook, New York: Penguin, 1999.

Hanc, J., The Essential Runner, Guilford, CT: Globe-Pequot Press/Lyons Press, 1994.

Hanc, J., The Essential Marathoner, Guilford, CT: Globe-Pequot Press/Lyons Press, 1996.

Noakes, T.D., Lore of Running, Champaign, IL: Human Kinetics Publishers, 2003.

4. Bicycling

Baker, A., The Essential Cyclist, Guilford, CT: Globe-Pequot Press/Lyons Press, 1998.

Barry, D.D., et al, Fitness Cycling, Champaign, IL: Human Kinetics Publishers, 2006.

Burke, E.R., Serious Cycling, Champaign, IL: Human Kinetics Publishers, 2002.

Hewitt, B. Bicycling Magazine's New Cyclist Handbook, Emmaus, PA: Rodale Press, 2005.

Howard, J., Mastering Cycling, Human Kinetics Publishers, 2010.

5. Swimming and Water Exercise

Evans, J., Total Swimming, Champaign, IL: Human Kinetics, 2007.

Hines, E., Fitness Swimming, Champaign, IL: Human Kinetics, 2008.

Katz, J., Swimming for Total Fitness Updated, New York: Broadway Books, 2002.

Montgomery, J. and Chambers, M., Mastering Swimming, Champaign, IL: Human Kinetics, 2009.

Thomas, D.G., Swimming, 3rd ed., Champaign, IL: Human Kinetics, 2005.

6. Walking

Fenton, M., The Complete Guide to Walking, Guilford, CT: Globe-Pequot Press/Lyons Press, 2001.

Iknioian, T. Fitness Walking, Champaign, IL, Human Kinetics, 2005.

Jonas, S. and Radetsky, P., PaceWalking: The Balanced Way to Aerobic Health, New York: Crown, 1988.

Neporent, L., Fitness Walking for Dummies, Foster City, CA: IDG Books, 2000.

Peters, E., The Complete Idiot's Guide to Walking for Health, Indianapolis, IN: 2001.

Spilner, M., Prevention's Complete Book of Walking, Emmaus, PA: Rodale Press, 2001.

7. Aerobics

General:

Brick, L., Fitness Aerobics, Champaign, IL: Human Kinetics, 1996.

Ettinger, W.H., et al, Fitness After 50, Champaign, IL: Human Kinetics, 2006.

Fitzgerald, M., Runner's World Guide to Cross-Training, Emmaus, PA: Rodale Press, 2004

Knight, E.L., CVR - Aerobics Workbook, Lakeland, FL: International Ski College, (1035 South Florida Ave., Lakeland, FL 33806), 1987.

Yacenda, J., Fitness Cross-Training, Champaign, IL: Human Kinetics, 1995.

8. Weight Training

General:

Baechle, T.R. and Earle, R.W., Weight Training, 4th ed., Champaign, IL: Human Kinetics, 2012.

Gergely, G., Aull, S., Newton, H., & Knight, E.L., Strength Conditioning for Preventive Medicine, Lakeland, FL: International Ski College, (1035 South Florida Ave., Lakeland, FL 33806), 1987.

For women:

Lewis-McCormick, I. A Woman's Guide to Muscle and Strength, Champaign, IL: Human Kinetics, 2005.

For older folks:

Westcott, W.L. and Baechle, T.R., Strength Training Past 50, Champaign, IL: Human Kinetics, 2007.

9. Triathloning/Duathloning

Bernhardt, G., Triathlon Training Basics, Boulder, CO: Velo Press, 2003.

Dallam, G. and Jonas, S., Championship Triathlon Training, Champaign, IL: Human Kinetics, 2008 (Italian translation, 2009).

Jonas, S., Triathloning for Ordinary Mortals, 20th Ann. 2nd ed., New York: W. W. Norton, 2006).

Jonas, S., 101 Ideas and Insights for Triathletes and Duathletes, Monterey, CA: Healthy Learning/Coaches Choice, 2011.

Jonas, S., Duathlon Training and Racing for Ordinary Mortals®: Getting Started and Staying with Its, Guilford, CT: FalconGuides/Globe Pequot Press, 2012.

10. Stretching

Anderson, B., & Anderson, J., Stretching 30th Anniversary, Bolinas CA: Shelter Publications, 2010.

McAtee, R.E. and Charland, J., Facilitated Stretching 3rd ed., Champaign, IL: Human Kinetics, 2007.

Tharett, S., *Functional Flexibility*, Monterey, CA: Healthy Learning/Coaches Choice, 2006.

11. Periodicals

Runners' World, Rodale Press, Emmaus, PA.

Bicycling, Rodale Press, Emmaus, PA.

Inside Triathlon, <http://triathlon.competitor.com/>

Triathlete, <http://triathlon.competitor.com/>

USA Triathlon Magazine, Colorado Springs, CO,
<http://usatriathlon.org/content/index/1622>

Appendix II

Table I

The Generic Exercise Plan

(beginning with PaceWalking(tm), but the numbers apply regardless of sport)

Introductory Program

(Times in Minutes)

Day	M	T	W	Th	F	S	S	Total	Type
<u>Week</u>									
1	Off	10	Off	10	Off	Off	10	30	Ordinary
2	Off	10	Off	10	Off	Off	10	30	walking
3	Off	20	Off	20	Off	Off	20	60	Ordinary
4	Off	20	Off	20	Off	Off	20	60	walking
5	Off	20	Off	20	Off	Off	20	60	Fast
6	Off	20	Off	20	Off	Off	20	60	walking
7	Off	20	Off	20	Off	Off	30	70	Fast
8	Off	20	Off	20	Off	Off	30	70	walking
9	Off	20	Off	20	Off	Off	20	60	Pace
10	Off	20	Off	20	Off	Off	30	70	Walking
11	Off	20	Off	30	Off	Off	30	80	Pace
12	Off	20	Off	30	Off	Off	30	80	Walking
13	Off	30	Off	30	Off	Off	30	90	Pace-Walking

Table II

The PaceWalking(tm) Plan: Phase II

Developmental Program

(Times in Minutes)

Day	M	T	W	Th	F	S	S	Total
<u>Week</u>								
1	Off	Off	Off	Off	Off	Off	Off	Off
2	Off	20	Off	20	Off	Off	20	60
3	Off	20	Off	20	Off	20	20	80
4	Off	20	Off	20	Off	20	30	90
5	Off	20	Off	30	Off	20	30	100
6	Off	20	Off	30	Off	20	40	110
7	Off	30	Off	30	Off	30	30	120
8	Off	30	Off	30	Off	30	40	130
9	Off	30	Off	40	Off	30	40	140
10	Off	30	Off	40	Off	30	50	150
11	Off	40	Off	30	Off	30	60	160
12	Off	40	Off	30	Off	40	60	170
13	Off	30	Off	40	Off	50	60	180

Table III

The PaceWalking(tm) Plan: Phase III A

Maintenance: Two Hours per Week

(Times in Minutes)

Day	M	T	W	Th	F	S	S	Total
<u>Week</u>								
1	Off	Off	Off	Off	Off	Off	Off	Off
2	Off	30	Off	30	Off	40	Off	100
3	30	Off	40	Off	20	Off	40	130
4	Off	40	Off	30	Off	40	Off	110
5	30	Off	40	Off	20	Off	40	130
6	Off	40	Off	30	Off	60	Off	130
7	20	Off	30	Off	30	Off	40	120
8	Off	40	Off	30	Off	50	Off	120
9	20	Off	40	Off	20	Off	60	140
10	Off	30	Off	30	Off	40	Off	100
11	20	Off	30	Off	20	Off	40	110
12	Off	40	Off	30	Off	60	Off	130
13	20	Off	30	Off	30	Off	40	120

Table IV

The PaceWalking(tm) Plan: Phase III B

Maintenance Plus: Three Hours Per Week

(Times in Minutes)

Day	M	T	W	Th	F	S	S	Total
Week								
1	Off	Off	Off	Off	Off	Off	Off	Off
2	Off	30	Off	40	Off	30	50	150
3	Off	30	Off	50	Off	40	60	180
4	Off	40	Off	40	Off	so	80	210
5	Off	30	Off	50	Off	40	60	180
6	Off	50	Off	30	Off	50	70	200
7	Off	40	Off	30	Off	30	60	160
8	Off	30	Off	50	Off	40	60	180
9	Off	30	Off	40	Off	30	50	150
10	Off	30	Off	50	Off	40	50	170
11	Off	40	Off	30	Off	50	70	190
12	Off	40	Off	40	Off	50	80	210
13	Off	30	Off	50	Off	40	60	180