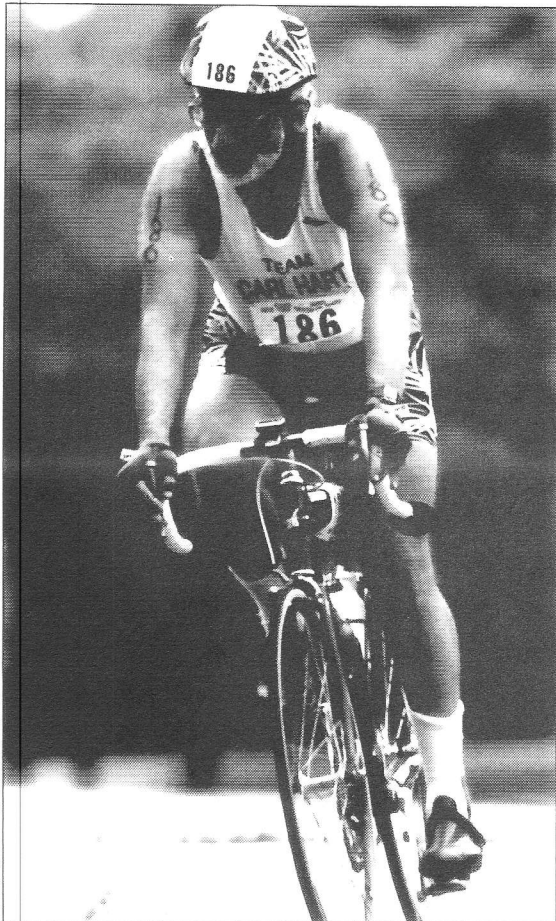


Stages of Change (II)

by Steven Jonas, M.D., M.P.H.

In the Spring 2000 issue of the AMAA Quarterly, I initiated a presentation on the widely-used "Stages of Change," a model of the psychological processes that underlie personal lifestyle and behavior changes. (See Prochaska and DiClemente, 1982; Prochaska; Prochaska, DiClemente and Norcross, 1992; Prochaska, Norcross and DiClemente, 1992; Prochaska and Velicer; Velicer and Prochaska). That presentation reviewed the first three of six stages; stages four, five and six are discussed here.

The Stages of Change model is helpful in gaining an understanding as to how lifestyle and personal behavior can be altered, as well as provide insight as to why the process sometimes fails. The six stages are: (1.) Precontemplation; (2.) Contemplation; (3.) Preparation; (4.) Action; (5.) Maintenance; and (6.) Termination. Programs that focus solely on the behaviors themselves, while not also attending to the behavioral sequence and underlying states of mind, have been shown to fail (Prochaska).



The first three stages deal with psychological sequences that precede all significant behavioral change. The final three stages are concerned with implementation of that change.

In Stage One, patients are neither thinking about the change nor ready to do anything about it. Stage Two patients actively consider taking a course of action toward one or more personal health-related behavioral changes, but have taken no concrete action toward that end. In Stage Three, patients make an active and detailed plan to change; they are thus ready for Stage Four.

Stage Four—Action

In implementing a chosen action, such as regular exercise or a more healthful diet, the patient should ideally heed the dictum that "gradual change leads to permanent change." In many cases, particularly those in which patients try to quit smoking, and for virtually all patients who attempt to cease alcohol abuse, change is attempted cold turkey—with all the attendant and obvious problems.

Stage Five—Maintenance

The next step toward full realization of a desired lifestyle change is the maintenance stage, in which the patient will either permanently and completely incorporate the new behavior or else partially abandon it. The Prochaska/ DiClemente model presents three possible outcomes: Lapse, relapse and termination. (I prefer the term "permanent maintenance" rather than termination.)

a. Lapse is a temporary abandonment of the positive behavior, followed by a quick return to it. There is no significant alteration in progress toward achieving goals that have been set. In fact, in certain actions, such as a program of regular exercise, a temporary and voluntary lapse can be a good idea in order to give the body and mind a break from the

routine.

With regard to alteration, however, significant is the key word. For the patient on the way toward a 30-pound weight loss over the course of six months, regaining a pound or two after losing 10 is not significant. It is, in fact, common among those who try to lose weight. More worrisome is a relapse.

b. Relapse. To the extent that positive behavior developed by the patient disappears, a relapse occurs. For example, a patient relapses upon indefinitely stopping a program of regular exercise, even after experiencing positive changes in body shape, increased strength and endurance. Reversing a relapse requires a determination as to why the relapse occurred. Armed with that information, the patient must return to the preparation stage and begin the change process again. Just as being sedentary, overweight or a smoker is not a sign of moral failure, relapsing is no sin. Relapses occur for various reasons, including: the patient was not ready for change; the patient set unrealistic goals (e.g., a life-long sedentary person commits to running the New York City Marathon in three months.); or an unachievable goal was set (e.g., an overweight patient who, for physiological and/or psychological reasons, cannot permanently lose a significant amount of weight. Heatherton and Tickle, 1999; Polivy, 1999).

Stage Six—Permanent Maintenance

Permanent maintenance (termination in Prochaska and DiClemente's terminology) occurs when the patient moves beyond the potential for relapse. Most patients hope to maintain permanent maintenance indefinitely. For example, most exercise to maintain a regular program of exercise, just as most patients who lose weight hope to keep it off permanently and most ex-smokers don't want to re-start. Certain types of lapses may still occur, such as the periodic scheduled lapses from regular exercise already noted. Periodic lapses can also help establish that absolute perfection is unnecessary for long-term maintenance and control. But for most patients in the permanent maintenance stage, relapses are not part of the program.

Once permanent maintenance is reached, many patients find the behavior itself, e.g. regular exercise, to be self-reinforcing. Outcomes of behavioral change, such as a thinner physique or for smokers, being addiction-free, are self-

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glucosamine. Together, these drugs have yielded results greater than each could separately. But more testing and observation is needed. (7)

Peter Jokl, M.D., chairman of the division of sports medicine at Yale University, prescribes NSAIDs, if at all, for no more than two to three days. He suggests that using NSAIDs for long term pain relief is not helpful. (4)

NSAIDs probably have less application for muscle injury than they do for intermittent conditions, e.g., dysmenorrhea and headaches. They may prove useful for injuries in areas with limited blood supply, or where inflammation is a matter of friction, i.e., chondromalacia or osteoarthritis. Chondromalacia consists of an erosion of the cartilage due to a malalignment; inflammatory enzymes can be harmful to the normal cartilage. (11) With osteoarthritis, there is likewise a deterioration of the cartilage. NSAIDs may also be indicated in swimmers with a rotator cuff injury caused by a muscle imbalance of the deltoids and the rotator cuff. In all instances, however, preventive measures (strengthening of muscles and correcting imbalances) should be the major thrust of treatment. Short-lived bouts of disuse can be ameliorated, however, with a brief course (a day or two) of NSAIDs so that down time can be minimized. But athletes should reduce training efforts while taking NSAIDs and not be fooled into believing that full healing has occurred.

Serious athletes often push themselves during training beyond the edge of fitness and into the realm of injury. In their zeal to excel, many athletes may not heed proper training protocol. Improper warm-up and cool-down, muscle and joint overuse, disregard of age limitations, insufficient rest and trauma can all

cause injury and interfere with one's athletic performance and enjoyment. With good coaching, sensible judgment and proper medical care, down time can be minimized. But the notion of relief being just a swallow away may be a little too much to swallow.

References

1. Griffin, MR, Ray, WA, Schaffner, W. Non-steroidal anti-inflammatory drug use and death from peptic ulcer in elderly persons. *Ann Int J. Med*, 1991;325 (2):87-91.
2. *J. Appl. Physiol.*, 1999, 86 (2): 598-604. Jacob SW, Lawrence RM, Zuker M, Regelson W. The Miracle of MSM: The Natural Solution for Pain. Penquin, USA, Feb, 1999.
3. Jacob, SW, Lawrence, RM, Zuker, M, Regelson, W. The Miracle of MSM: The Natural Solution for Pain. Penquin, USA, Feb., 1999.
4. Jokl, P, 2-19-00, Personal Correspondence.
5. Jouzea, J-Y, Terlain, B, Abid, A, Netter, P. Cyclo-oxygenases isoenzymes: How recent findings affect thinking about non-steroidal anti-inflammatory drugs. *Drugs*, 1997; 53(4):563-82
6. MSM (methylsulfonylmethane). The National Medicines Comprehensive Database by Pharmacist's Letter and Prescriber's Letter, 1999.
7. Pharmacist's Letter/Prescriber's Letter Continuing Education Booklet: Nonherbal Dietary Supplements, 1998, p 14-15.
8. Phillips, AC, Polisson, RP, Simon, LS. NSAIDs and the elderly— toxicity and economic implications. *Drugs & Aging* 1997;10(2):119-130.
9. *Physiology Of Sport And Exercise*, 2nd ed., Costill, D & Wilmore, J, 1999, 474-475.
10. Roller, K., *Drug Store News*, Sept.21, 1998, p.24.
11. Schnitzer, T.J. Osteoarthritis treatment update. *Postgrad Med* 1993; 93: 89-95.
12. Tapadinhas, MJ, Rivera, IC, Bignamini, AA. Oral glucosamine sulfate in the management of arthrosis: report on a multi-center open investigation in Portugal. *Pharmatherapeutica*. 1982;3 (3):157-168.
13. *The Medical Letter*, Vol 41 (issue 1045), January 29, 1999: 11-12.
14. Vidal y Plana, RR, Bizzarri, D, Rovati, AL. Articular cartilage pharmacology. In vitro studies on glucosamine and non-steroidal anti-inflammatory drugs. *Pharmacol Res Comm*. 1978;10(6):558-569.
15. Wolheim, FA. Current pharmacological treatment of osteoarthritis. *Drugs*. 1996;52 (53):27-38.

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reinforcing as well. As is well known to most regular exercisers, cessation of exercise for an extended period of time results in physical and mental lethargy so that an exercise program is taken up once more.

In a future column, discussion will focus on motivation, the engine that drives all stages of change.

References:

1. Miller, W.R., and Rollnick, S., *Motivational Interviewing: Preparing People to Change Addictive Behavior*. New York: The Guilford Press, 1991.
2. Heatherton, T.F. and Tickle, J., "Exploding the Myth: Dieting Makes You Thin." *Healthy Weight Journal*, 13, 7, 1999.
3. Polivy, J., "The Mythology of Dieting." *Healthy Weight Journal*. 13, 1, 1999.
4. Prochaska, J.O., "Working in Harmony with How People Change Naturally," *The Weight Control Digest*, 3, 249, May/June, 1993.
5. Prochaska, J.O., and DiClemente, C.C., "Transtheoretical therapy: Toward a More integrative model of change." *Psychotherapy: Theory, Research, and Practice*, 19, 276-288, 1982.
6. Prochaska, J.O., DiClemente, C.C., and Norcross, J.C., "In Search of How People Change: Applications to Addictive Behavior." *American Psychologist*, 47, 1102-1114, 1992.
7. Prochaska, J.O., Norcross, J.C., and DiClemente, C.C., "Attendance and Outcome in a Worksite Weight Control Program: Processes and Stages of Change as Process and Predictor Variables." *Addictive Behaviors*, 17, 35-45, 1992.
8. Prochaska, J.O., and Velicer, W.F., "The Transtheoretical Model of Behavior Change." *American Journal of Health Promotion*. 12, 38-48, 1997.
9. Velicer, W.F. and Prochaska, J.O., "Introduction: The Transtheoretical Model," *American Journal of Health Promotion*. 12, 6, 1997.

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