

One can only hope that interest in the comprehensive treatment of the mentally ill, with all that it implies, will be revived and that there will not be, as one fears, a return to custody and restraint, which would circumvent society's responsibility to ensure that the mentally ill are adequately treated.

In his paper Voineskos attempts to dispel the myth that open wards and related manifestations of effective treatment programs require greater concentrations of staff than do closed wards

and more regressive forms of treatment. If treatment is to be effective it must result in self-control and the development within the patient of the ability to obtain gratification and satisfaction from living without indulging in socially undesirable behaviour. In terms of human behaviour we should always remember Thoreau's statement that there is "no rule which holds so true as that we are always paid for suspicions by finding what we suspect"² — that is, patients are often able to pick

up the cues and double messages around them and tend to respond to their perceptions of what others expect of them, with respect to their behaviour.

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Home testing of fitness of Canadians

At a national conference on fitness and health in 1972 various aspects of the relation between these two determinants of personal well-being were discussed,¹ and out of it came the recommendation that a self-administered fitness test for Canadians be developed. The result is the Fit-Kit. Recently produced for the Canadian public, the Fit-Kit is a package designed to enable any Canadian to evaluate his or her own degree of physical fitness and to motivate emergence from the state of sloth to which each of us too readily is attracted.

It is a general opinion that Canadians are unfit: less than one half of the population can be classified as manifesting a degree of fitness that is fair or low. Precisely what the consequences of a poor level of fitness are is not clear, though today, as long ago, it is believed that fitness, like virtue, brings its own rewards, intangible though these may be. Long ago, in Plato's *Dialogues*, Timaeus told Socrates that "moderate exercise reduces to order, according to their own affinities, the particles and affections which are wandering about the body";² and, more recently, Fox and his colleagues³ summarized the modern view by stating that "there is an ever-increasing body of knowledge suggesting... that increased habitual physical activity can be helpful in enhancing health, improving the quality of life and probably contributing to the prevention of coronary heart disease for many if not most persons." Much more research is required so that a body of hard data concerning the relation of fitness to health can be built up, but meanwhile it is prudent to follow the assumption that fitness is a prerequisite for health. It is for this reason that the fitness and amateur sport branch of Health and Welfare Canada has seen fit, so to speak, to lead the way in encouraging

Canadians to become aware of the desirability of evaluating their own degree of physical fitness by preparing the Fit-Kit.

The Fit-Kit contains eight items. The basic one is a phonograph record that permits anyone between 15 and 69 years of age to conduct a test of cardiopulmonary fitness in their own home without supervision. Entitled "The Canadian Home Fitness Test: 1, 2, 3... Steps to Better Health", the record provides instructions on how to perform a two-step exercise test and then how to relate the ensuing pulse rate to three levels of fitness — "undesirable", "minimum" and "recommended". Based on work of Bailey, Shephard and Mirwald (see page 675 of this issue of the *Journal*), the test is adjusted for sex and age. A person is instructed to step to music at a certain speed for 3 minutes, to count the radial pulse rate for 10 seconds and then, if the pulse rate does not exceed a given rate, to proceed to a second 3-minute test, after which the 10-second pulse rate is again determined. Take the example of a man in his 40s: he is allowed to take the second exercise test if his 10-second pulse rate is 25 or less, but he is warned not to take it if the rate is 26 or more, for he has an undesirable level of fitness; the fitter 40-year-old, however, is permitted to proceed to the second 3-minute test and at the end of this he can determine whether he has a minimum level of fitness (pulse rate, 24 or more) or the recommended level of fitness (pulse rate, 23 or less).

The instructions accompanying the record make it clear that seven simple questions (based on the PAR-Q questionnaire⁴) concerning one's medical history must be answered appropriately before a person decides whether it is safe for him to take the test. If a person answers Yes to the question, Has your doctor ever said you have heart

trouble?, for example, he is directed to consult his physician before going further. Studies of the Canadian Home Fitness Test (CHFT) indicate that the test is safe: among 14 794 persons screened before taking the test some 3% were not permitted to take it for medical reasons, and among the 14 312 persons analytically tested through January 1976 only three minor incidents were recorded (one man fainted after incorrectly performing carotid [rather than radial] palpation — the radial pulse is now counted; one man became distressed during the second stage of the test but he, it was found, had falsified answers in the preliminary questionnaire; and one man who was tired slipped and sprained his ankle) (S. Keir: personal communication, 1976). The test is therefore now freely prescribed.

Also contained in the Fit-Kit are seven items designed to motivate persons to participate in individual or group physical activity programs. One, labelled "Rx for Physical Activity", provides a good guide to basic needs for physical activity with respect to weight control, flexibility, muscular endurance, cardiopulmonary fitness and physical recreation. Another, dubbed "Fit-Tips", is a series of rhythmic exercises to improve strength, endurance and flexibility in all major muscle groups. The third item is a "Fit-Kit Progress Chart", which enables a person to monitor his progress in a physical fitness program. The next item is a "Walk-Run Distance Calculator", constructed to help individuals calculate how far they should walk or run in 15 minutes to improve their level of fitness, and based on the work of Jetté,⁵ another aspect of which is to be found in the paper by Jetté and colleagues on page 680 of this issue of the *Journal*. The sixth item is an advanced test of fitness for those who have attained and wish

Dalmane[®] Roche[®]

(flurazepam)

Rx summary:

Indications Useful in all types of insomnia characterized by difficulty in falling asleep, frequent nocturnal awakenings and/or early morning awakening. 'Dalmane' can be administered effectively for short-term and intermittent use in patients with recurring insomnia and poor sleeping habits; however, the safety and efficacy of long-term use has not been established.

Contraindications Known hypersensitivity to the drug and, because of lack of sufficient clinical experience, in children under fifteen years of age.

Warnings Safety in women who are or may become pregnant has not been established; hence as with all medication, 'Dalmane' should be given only when the potential benefits have been weighed against possible hazard to mother and child.

Precautions *Use in the Elderly:* In elderly and debilitated patients, it is recommended that the dosage initially be limited to 15 mg to preclude the development of oversedation, dizziness and/or ataxia reported in some patients.

Use in Emotional Disorders: The usual precautions are indicated for severely depressed patients or those in whom there is any evidence of latent depression, particularly the recognition that suicidal tendencies may be present and protective measures may be necessary.

Potential of Drug Effects: Since 'Dalmane' has a central nervous system depressant effect, patients should be advised against the simultaneous ingestion of alcohol and other central nervous system depressant drugs during 'Dalmane' therapy.

Physical and Psychological Dependence: As with any hypnotic, caution must be exercised in administering to individuals known to be addiction-prone or those whose history suggests they may increase the dosage on their own initiative.

General: All patients should be cautioned against engaging in activities requiring precision and complete mental alertness such as in operating machinery or driving a motor vehicle shortly after ingesting the drug. Should 'Dalmane' be used repeatedly, periodic blood counts and liver and kidney function tests should be performed. The usual precautions should be observed in patients with impaired renal or hepatic function. Patients' reactions will be modified to a varying extent depending on dosage and individual susceptibility.

Adverse Effects Dizziness, drowsiness, lightheadedness and ataxia may occur. These adverse effects are particularly common in elderly and debilitated patients. (See Precautions). Severe sedation, lethargy, disorientation, probably indicative of drug intolerance or overdose, have been reported.

Dosage Dosage should be individualized for maximal beneficial effects. The usual adult dosage is 30 mg before retiring. In elderly and/or debilitated patients, it is recommended that therapy be initiated with 15 mg until individual responses are determined. Moderate to severe insomnia may require 15 or 30 mg.

Supply 'Dalmane' 15, capsules (orange and ivory) 15 mg, 100 and 500.
'Dalmane' 30, capsules (red and ivory) 30 mg, 100 and 500.

Complete prescribing information available on request.

®Reg. Trade Mark



Hoffmann-La Roche Limited
Vaudreuil, Québec

Bactrim^{*} Roche[®] Suspension

Rx Summary

Indications: The following types of infections when caused by susceptible pathogens—upper and lower respiratory tract infections (particularly chronic bronchitis and including acute and chronic otitis media); acute, recurrent, and chronic urinary tract infections; genital tract infections (uncomplicated gonococcal urethritis); gastrointestinal infections; and skin and soft tissue infections. Not indicated in infections due to *Pseudomonas*, *Mycoplasma*, or viruses.

Contraindications: Marked liver damage; blood dyscrasias; hypersensitivity to trimethoprim or sulfonamides; or marked renal impairment when repeated serum assays cannot be carried out. Premature or newborn infants. For the time being, 'Bactrim' is contraindicated during pregnancy.

Precautions: As with other sulfonamide preparations, benefit should be appraised versus risk in patients with liver damage, renal damage, urinary obstruction, blood dyscrasias, allergies, or bronchial asthma. Possibility of superinfection with a nonsensitive organism should be borne in mind.

Adverse reactions: Hematological changes, particularly in elderly patients (primarily neutropenia and thrombocytopenia; also, less frequently, leukopenia, aplastic and hemolytic anemia, purpura, agranulocytosis, and bone marrow depression). Nausea, vomiting, gastric intolerance, and rash; also, less frequently, diarrhea, constipation, flatulence, anorexia, pyrosis, gastritis, gastroenteritis, urticaria, headache, and liver changes (elevations in alkaline phosphatase and serum transaminase levels). For complete list of side-effects occasionally reported, please see product monograph.

Dosage and administration: *Children under 12 years of age.*

Young children—dosage according to weight. Under 2 years—2.5 ml suspension twice daily. 2 to 5 years—2.5 to 5 ml suspension twice daily or 1 to 2 pediatric tablets twice daily.

6 to 12 years—5 to 10 ml suspension, or 2 to 4 pediatric tablets, or 1 adult tablet twice daily.

Adults and children over 12 years of age. Standard dosage—2 tablets twice daily (morning and evening).

Minimum dosage and long-term treatment—1 tablet twice daily.

Maximum dosage (overwhelming infections)—3 tablets twice daily.

Uncomplicated gonorrhoea—2 tablets 4 times daily for 2 days.

For complete dosage information, please see product monograph.

Supply: Suspension (aniseed-flavoured), each 5 ml containing 40 mg trimethoprim and 200 mg sulfamethoxazole; bottles of 100 and 400 ml. Tablets, containing 80 mg trimethoprim and 400 mg sulfamethoxazole; bottles of 100 and 500.

Pediatric tablets, containing 40 mg trimethoprim and 200 mg sulfamethoxazole; bottles of 100 and 500.

Product monograph available on request.

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to maintain the recommended standard of fitness. The next item is a gimmick — five crests for those who wish to make it known that they have taken the CHFT. And, finally, a bonus: the well known booklet by Åstrand entitled "Health and Fitness".

The Fit-Kit is made available to the public through Government of Canada bookstores and organizations such as the YMCA for less than \$5 (further details may be obtained from the Information Canada bookstore, 171 Slater St. Ottawa, ON K1A 0S9). It is expected to be accepted well, for test marketing studies in Guelph, Ont. and Trois-Rivières, PQ have demonstrated acceptance by 83% of respondents and a clear understanding of the instructions in 94%. The CHFT and supplementary material are also available without financial cost to any health, paramedical or physical education professional who attends one of the many clinics sponsored by the Canadian Association of Health, Physical Education and Recreation (333 River Rd., Ottawa, ON K1L 8B9); the only cost is the "energy cost" of having attended a clinic.

Those who have designed the CHFT and the motivational Fit-Kit have prepared the materials in recognizing the need for personal satisfaction among Canadians who take the test and who participate in a program of physical activity. Some feeling of personal reward must be engendered by any such program, otherwise individuals will not persist in the program. To what extent the Fit-Kit will motivate Canadians to persist in developing and maintaining their own standards of fitness and health remains to be seen; cynics say that Canadians attend more carefully to the condition of their cars and pets than to that of themselves. In this regard, therefore, the Canadian medical profession will have a continuing responsibility to motivate Canadians to become attuned to the need to take part in a program of fitness if they are to be truly healthy. Recognizing the importance of this, the Canadian Medical Association has helped to prepare a handbook that Health and Welfare Canada will shortly make available to physicians — a handbook that will serve as a primer of exercise physiology and fitness testing. It is to be hoped that physicians will convince the Canadian public, in the words of Fuller,⁶ written nearly 300 years ago, "that the use of exercise does conduct very much to the preservation of health, that it promotes the digestion, raises the spirits, refreshes the mind, and that it strengthens and relieves the whole Man".

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6 minutes of a ski event is about 0.4, 0.1 due to chance and 0.3 due to the exercise;⁵ if 5 million middle-aged adults each performed the CHFT on one occasion, the corresponding risk would be 0.13 to 0.16, 0.1 being attributable to chance and 0.03 to 0.06 to the added risk of the exercise. These calculations imply that if all middle-aged Canadians continued to perform the test once per year without restriction, it would be 16 to 33 years before there was a death attributable to the test; exclusion of half of the "high-risk" patients by the physical activity readiness questionnaire should lengthen the waiting period for a coronary incident to 33 to 66 years. Clearly, we believe the procedure is a safe and rational motivational test.

Consumer acceptance

Recreation Canada sponsored a test marketing of the CHFT¹⁹ in the cities of Guelph, Ont. and Trois Rivières, PQ, using English- and French-language editions of the material, respectively. Questionnaires (3000) were circulated to, and telephone interviews (800) conducted with, the households receiving the kit in each city. Of the respondents 83% were positive, 10% had some reservations, 5% were indifferent and 2% were negative in the evaluation of the test; enthusiasm for the test was more pronounced among the respondents in Trois Rivières than among those in Guelph. Over 78% of respondents read all the information on the record jacket and listened to the record; of this group 54% took the test and a further 9% attempted to do so. Stated reasons for not taking the test included "lack of a record player" (38%), "physical inability" (9%), "lack of steps" (2%) and "indifference" (51%). Of those taking the test 96% encouraged others to try it, the majority indicating use by three or more persons; this suggests that general interest was aroused in households receiving the kit. The instructions seemed at an appropriate level, since 94% of those taking the test found the procedures simple or clear; 90% of subjects also said they would take the test again. The accuracy of the scores obtained is questionable: 54% of the sample rated their fitness as being at the "recommended" level, 22% at the "minimum" level and only 6% at the "undesirable" level, with 10% not completing the test and 8% unable to figure out their scores. This suggests that, as in the validation trials, subjects may have underestimated their postexercise pulse rates; however, further study would be needed to eliminate the alternative hy-

pothesis, that those taking the test and responding to the questionnaire were the more fit members of the communities evaluated.

Current assessment

From the general public acceptance of the CHFT, reactions at several professional meetings, and data suggesting that several members of most households have tried the procedure during test marketing, there seems little question that the CHFT will serve as a useful motivating tool, encouraging public interest in physical fitness and pointing to the need for greater physical activity.

No great precision is claimed for the fitness categorizations yielded by the test. On a population basis there is a reasonable relation between reported activity and fitness category but, as in most submaximal exercise tests, substantial errors are possible in predicting the fitness of the individual. Even if more accurate methods of predicting aerobic power were available, it is still questionable how far one could counsel the individual concerning his physical condition, since a low score in any individual could reflect either lack of activity or a low inherited potential. On the other hand, if an individual increases his activity, scores should improve. The test thus has a potential for providing both initial interest in fitness programs and sustained motivation of the exercise "convert". The long-playing record also offers a convenient method for the large-scale screening of populations by paramedical personnel; in the Saskatoon validation trial¹⁰ we found it practicable to use the CHFT as a means of administering a standard exercise protocol to upwards of 100 subjects per hour. The prediction of aerobic power obtained from this procedure was at least as accurate as other available techniques. We avoided the complication of quadriceps weakness, which distorts bicycle ergometer readings in elderly subjects, and we were able to record good-quality exercise electrocardiograms in all participants at a comparable percentage (65 to 70%) of maximal aerobic power.

The work described in this paper has been carried out with the financial support of Recreation Canada. We also acknowledge the personal interest and contributions of Sandy Keir (Recreation Canada), Russ Kisby (Participation Canada) and Ken Keirstead (Quinton Instruments, Canada). For any additional information about the test write to: Recreation Canada, 365 Laurier Ave., Ottawa, ON K1A 0X6.

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