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Stages of change in physical activity

In physical activity as in other behaviours, there is a stepwise progression toward change. Research suggests that the adoption of a physically active lifestyle occurs in stages, and that movement through these stages is cyclical, involving a pattern of adoption, maintenance, relapse, and readoption over time.[1,2,3] People in different stages of change often have different needs. Knowing where Canadians stand in this cycle is therefore invaluable for tailoring interventions to encourage them on the road to physical activity.

Through the 1995 Physical Activity Monitor, the Canadian Fitness and Lifestyle Research Institute assessed the stage of readiness for physical activity in more than 2500 Canadians. Canadians' past and present activity behaviour as well as their future intentions to be active were all probed. It was therefore possible to categorize respondents into seven mutually exclusive categories, shown in Table 1.

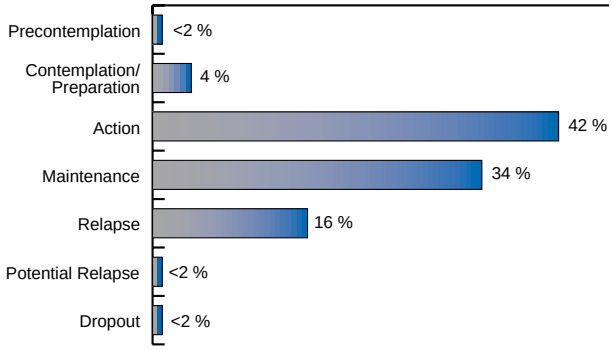
Table 1

STAGES OF CHANGE AND RELAPSE

	Past activity	Present activity	Future intentions
Precontemplation	no	no	no
Contemplation/ Preparation	no	no	yes
Action	no	yes	yes
Maintenance	yes	yes	yes
Relapse	yes	no	yes
Potential relapse	yes/no	yes	no
Dropout	yes	no	no

Figure 1

DISTRIBUTION OF CANADIANS IN PHYSICAL ACTIVITY STAGES



1995 Physical Activity Monitor, CFLRI

Figure 1 shows the distribution of Canadians according to the different stages.

Precontemplation Very few are in the precontemplation stage. People in this stage have no intention to change their behaviour in the foreseeable future and have no history of physical activity over the last 12 months.

Contemplation/Preparation A small proportion is in the contemplation or preparation stages. People in these stages are aware that physical inactivity is a problem and are seriously considering taking some action to address the problem.

Action The action stage contains the largest proportion of Canadians. These individuals have taken steps to become active in the last 12 months and intend to stay active.

Maintenance One third of Canadians are currently in the maintenance stage. People in this stage have a stable pattern of physical activity and have probably developed effective strategies for avoiding relapse.

Relapse A sizeable proportion of Canadians (one in six) are in relapse. They were active at some point in the last 12 months but are no longer active. They intend to resume physical activity in the foreseeable future, however.

Potential relapse Few Canadians are in potential relapse, where they are active now but don't intend to continue.

Dropout Very few have dropped out completely from physical activity. People in this group have ceased activity after being active in the last 12 months and have no intention of being active again.

The Canadian Fitness and Lifestyle Research Institute has added the three relapse categories to the original five-stage model developed by Prochaska and DiClemente,[1] believing that people in relapse may well require different intervention strategies than people in other stages.

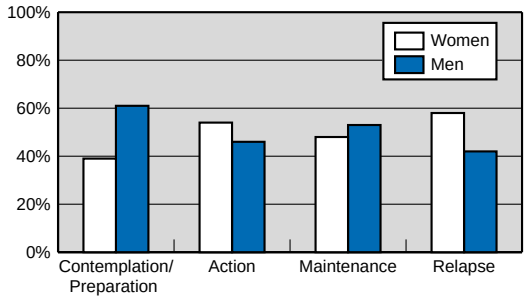
For example, interventions for contemplators deal with the adoption of physical activity, whereas interventions for people in relapse need to consider the resumption of physical activity. Similarly, dropouts, who have been active in the past, will likely need a very different intervention approach than precontemplators, who have been "historically sedentary."

Sex differences

Figure 2 shows the relative proportions of men and women in the four stages containing sufficient numbers of respondents for detailed analysis. Women outnumber men in the action and relapse stages, whereas men are more numerous in the contemplation/preparation stage. The maintenance stage shows about equal numbers of men and women.

Figure 2

RELATIVE PROPORTIONS OF MEN AND WOMEN IN EACH PHYSICAL ACTIVITY STAGE



1995 Physical Activity Monitor, CFLRI

Age differences

Particular age groups are also more likely to belong to some stages of change. For example, Table 2 shows a disproportionate number of Canadians aged 25 to 44 in the relapse category. This suggests that the child-bearing generation is finding it difficult to maintain its physical activities, despite good intentions to do so.

Table 2

BREAKDOWN OF PHYSICAL ACTIVITY STAGES by age group

Stage	18-24	25-44	45-64	65 +
Contemplation/ Preparation	–	43%	–	–
Action	19	47	24	11
Maintenance	14	44	29	13
Relapse	12	58	25	–

1995 Physical Activity Monitor, CFLRI

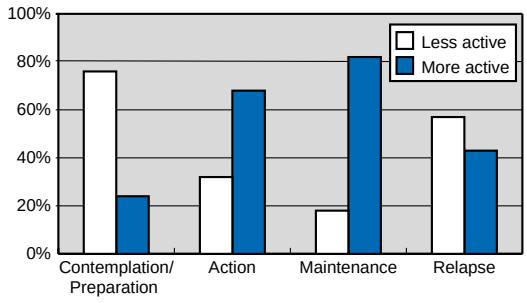
Activity levels

Stage theories predict that people classified in the early stages such as precontemplation, contemplation, and preparation constitute the inactive segment of the population. In line with the theories, Figure 3 shows many more inactive or somewhat active Canadians in the contemplation/preparation stage. In addition, Canadians who are more active show up in greater numbers in the action and maintenance stages.

The relapse stage shows a more even distribution of less active and more active individuals. This pattern results from the fact that people in relapse have been active at least some of the time over the previous 12 months. Because energy expenditure is calculated as the average daily expenditure over 12 months, some respondents have accumulated enough expenditure to classify in the "more active" column.

Figure 3

RELATIVE PROPORTIONS OF ACTIVE AND INACTIVE IN EACH PHYSICAL ACTIVITY STAGE



1995 Physical Activity Monitor, CFLRI

Barriers associated with each stage

The barriers experienced by people in each stage point to some of the needs that could be addressed to help them move on to the next stage. Table 3 lists the barriers to physical activity reported by individuals in the early stages.

A first glance at the major barriers reveals that lack of energy and motivation are at the top of the list for all stages. Long-term illness or injury is a major barrier only for people in the precontemplation stage. Lack of time, on the other hand, is prominent only in the other three stages as well as in the maintenance stage (not shown), where it constitutes the single major barrier to involvement in physical activity.

Table 3

BARRIERS ACCOMPANYING EARLY STAGES*

Precontemplation	Contemplation/ Preparation	Relapse	Action
Major barriers			
Motivation	Motivation	Time	Time
Energy	Energy	Energy	Energy
Illness/Inj.	Time	Motivation	Motivation
Moderate barriers			
Comfort	Comfort	Cost	Cost
Time	Skill	Illness/Inj.	Illness/Inj.
Skill	Cost	Comfort	Facilities
Fear of inj.	Illness/Inj.	Facilities	Comfort
Cost	Fear of inj.	Skill	Skill
Partner	Safe places	Partner	Fear of inj.
Transport	Partner	Fear of inj.	Safe places
Facilities	Facilities	Safe places	Child care
	Support	Child care	
	Child care		
Minor barriers			
Safe places	Programs	Support	Partner
Programs	Transport	Programs	Programs
Support		Transport	

* Precontemplation includes dropouts; action includes potential relapse.

1995 Physical Activity Monitor, CFLRI

Among the moderate barriers, lack of skill and feeling uncomfortable are seen as far more important by people in precontemplation and preparation than by people in relapse or action. Problems with transport constitute a moderate barrier only for those in precontemplation, being of relatively minor importance to individuals in other stages. Child care is not an issue for precontemplators, who tend to be older, but it does rate as a moderate barrier for people in the other three stages.

The relative importance of all barriers appears to decrease from relapse to action to maintenance. This is particularly apparent for barriers related to the physical and social environment, such as lack of a partner, lack of support from family and friends, lack of safe places, lack of facilities, and lack of child care. Remarkably, people in maintenance perceive half as many moderate barriers as people in earlier stages.

On to the next stage

- Focus efforts on helping Canadians to move from the action to the maintenance stage. Encourage them to use the following strategies:[4]

  reinforcement management—being rewarded by self or others for making changes in exercise behaviour,

  helping relationships—accepting and using the support of caring others during attempts toward exercise,

  counterconditioning—substituting alternative behaviours for being sedentary such as taking the stairs instead of the elevator, and

  stimulus control—avoiding or countering situations that trigger relapse.

- Focus on minimizing the amount of time Canadians spend in the relapse stage. In particular, provide support to women and to the population of child-bearing age.
- Find ways to reduce environmental and social barriers, especially for those in the relapse and action stages.
- Work on reducing feelings of discomfort by offering programs that don't require special skills for people in contemplation and preparation.
- Provide programs and interventions that help people in all stages to better manage their time and juggle the often competing demands of today's busy lifestyle.

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Canadian Fitness and Lifestyle Research Institute
201-185 Somerset Street West
Ottawa, Ontario
K2P 0J2

tel.: (613) 233-5528
fax: (613) 233-5536
e-mail: info@cflri.ca

References

[1] Prochaska, J.O. & DiClemente, J.O. (1992). In search of how people change: Applications to addictive behaviour. *American Psychologist*, September, 1102–1114.

[2] Marcus, B.H., Banspach, S.W., Lefebvre, R.C., Rossi, J.S., Carleton, R.A., & Abrams, D.B. (1992). Using the stages of change model to increase the adoption of physical activity among community participants. *American Journal of Health Promotion, 6* (6), 424-429.

[3] Sallis, J.F. & Hovell, M.F. (1990). Determinants of exercise behavior. *Exercise and Sport Sciences Reviews, 18*, 307–330.

[4] Canadian Fitness and Lifestyle Research Institute. (1995). Stages of change in exercise. *The Research File* (No. 95-05).

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Stages of physical activity among Canadians

1995 Physical Activity Monitor

	Contemplation/ preparation	Relapse	Action	Maintenance
TOTAL, ADULTS (18+)	4%	16%	42%	34%
women	3	18	44	31
men	5	14	40	37
18–24	–	13	52	30
women	–	18	50	26
men	–	–	54	34
25–44	4	20	42	32
women	–	23	42	29
men	–	17	41	34
45–64	–	15	38	38
women	–	15	43	34
men	–	16	33	42
65+	–	–	41	38
women	–	–	47	35
men	–	–	32	42
EDUCATION LEVEL				
Less than secondary	–	14	38	34
Secondary	–	18	46	28
College	–	16	45	33
University	–	17	40	38
HOUSEHOLD INCOME				
< $20,000	–	16	44	33
$20,000–29,999	–	18	41	35
$30,000–39,999	–	19	42	30
$40,000–59,999	–	18	42	29
$60,000–79,999	–	19	38	38
$80,000–99,999	–	–	43	36
≥ $100,000	–	–	35	47
EMPLOYMENT STATUS				
Full-time worker	5	16	42	35
Part-time worker	–	16	49	31
Unemployed	–	–	47	25
Homemaker	–	21	45	23
Student	–	–	48	32
Retired	–	11	39	37

– *Data unavailable because of insufficient sample size.*

(cont'd)

	Contemplation/ preparation	Relapse	Action	Maintenance
COMMUNITY SIZE				
< 1,000	–	–	*42%*	*37%*
1,000–9,999	–	*15*	*46*	*29*
10,000–74,999	–	*17*	*43*	*33*
75,000–299,999	–	*18*	*43*	*34*
≥ 300,000	–	*15*	*41*	*37*
FAMILY COMPOSITION				
Living with a partner	*4*	*16*	*41*	*35*
with children at home	–	*19*	*44*	*31*
without children at home	–	*13*	*39*	*38*
Widowed, divorced, separated	–	*17*	*43*	*31*
with children at home	–	–	*34*	*36*
without children at home	–	*16*	*45*	*30*
Never married	–	*16*	*45*	*33*
with children at home	–	–	–	–
without children at home	–	*16*	*46*	*32*
ENERGY EXPENDITURE				
Active (≥3 KKD[1])	–	*7*	*41*	*51*
Moderately active (1.5–2.9 KKD)	–	*15*	*49*	*31*
Somewhat active (0.5–1.4 KKD)	–	*28*	*45*	*19*
Sedentary (<0.5 KKD)	–	*25*	*28*	*17*
ACTIVITY PATTERN				
≥ Every other day	–	*11*	*45*	*41*
≥ Twice a week	–	*24*	*45*	*25*
< Twice a week	*14*	*28*	*33*	*16*

1 Kilocalories/kilogram of body weight/day; an energy expenditure of 3 KKD is equivalent to walking one hour every day.

– Data unavailable because of insufficient sample size.

Stage profiles

1995 Physical Activity Monitor

	Age				Women				Men			
	18-24	25-44	45-64	65+	18-24	25-44	45-64	65+	18-24	25-44	45-64	65+
Contemplation/preparation	–	43%	–	–	–	–	–	–	–	–	–	–
Relapse	12	58	25	–	14	59	21	–	–	57	30	–
Action	19	47	24	11	17	44	25	14	21	49	22	8
Maintenance	14	44	29	13	12	44	29	15	15	45	30	11

	Education level			
	< Secondary	Secondary	College	University
Contemplation/preparation	–	–	–	–
Relapse	17	29	23	30
Action	19	29	24	28
Maintenance	22	23	22	34

	Household income						
	< $20,000	$20,000–29,999	$30,000–39,999	$40,000–59,999	$60,000–79,999	$80,000–99,999	≥ $100,000
Contemplation/preparation	–	–	–	–	–	–	–
Relapse	15	15	15	26	16	–	–
Action	17	15	15	25	13	8	7
Maintenance	16	15	13	21	16	8	12

– *Data unavailable because of insufficient sample size.*

(cont'd)

	Employment status					
	Full-time worker	**Part-time worker**	**Unemployed**	**Homemaker**	**Student**	**Retired**
Contemplation/preparation	*59%*	*–*	*–*	*–*	*–*	*–*
Relapse	*50*	*13*	*–*	*10*	*–*	*9*
Action	*49*	*16*	*7*	*8*	*7*	*12*
Maintenance	*54*	*13*	*5*	*5*	*6*	*15*

	Community size				
	< 1,000	**1,000–9,999**	**10,000–74,999**	**75,000–299,999**	**≥ 300,000**
Contemplation/preparation	*–*	*–*	*–*	*–*	*–*
Relapse	*–*	*21*	*23*	*19*	*28*
Action	*10*	*24*	*22*	*17*	*28*
Maintenance	*11*	*19*	*21*	*18*	*32*

	Family composition								
	Living with a partner			**Widowed, divorced, separated**			**Never married**		
	Total	**With children**	**Without children**	**Total**	**With children**	**Without children**	**Total**	**With children**	**Without children**
Contemplation/preparation	*61%*	*–*	*–*	*–*	*–*	*–*	*–*	*–*	*–*
Relapse	*64*	*89*	*47*	*13*	*–*	*16*	*24*	*–*	*37*
Action	*62*	*89*	*47*	*13*	*6*	*16*	*26*	*–*	*37*
Maintenance	*65*	*83*	*56*	*11*	*8*	*13*	*24*	*–*	*31*

– *Data unavailable because of insufficient sample size.*

(cont'd)

	Energy expenditure			
	Active (≥3 KKD[1])	**Moderately active (1.5–2.9 KKD)**	**Somewhat active (0.5–1.4 KKD)**	**Sedentary (<0.5 KKD)**
Contemplation/preparation	–	–	–	–
Relapse	17	26	40	18
Action	36	32	24	7
Maintenance	56	26	13	6

	Activity pattern		
	≥ Every other day	**≥ Twice a week**	**< Twice a week**
Contemplation/preparation	–	–	69%
Relapse	47	21	32
Action	70	15	14
Maintenance	81	11	9

1 Kilocalories/kilogram of body weight/day; an energy expenditure of 3 KKD is equivalent to walking one hour every day.

– Data unavailable because of insufficient sample size.