

# Physical Activity and Weight in the Menopausal Years

## The Melpomene/*SELF* Magazine Study

Judy Mahle Lutter, M.A., and Kathy Grumstrup, M.A.

### Among the Study Findings

#### Weight Change

- Ninety-nine percent of participants knew what had happened to their weight during the previous year.
- More than half of the participants weighed themselves at least a couple of times per week.
- Women whose weight had decreased were more likely to say their happiness was much better than most other women their age.

#### Weight Perceptions

- Women who considered themselves slightly underweight were more likely to believe they were in much better health than others their age.
- Women who considered themselves underweight were more likely to believe their feelings of happiness were better or much better than other women their age.

#### Stress

- Stress level alone was not an indicator of how women ranked their health.
- Those women who reported high stress levels reported lower levels of physical activity.

#### Menopause

- Post-menopausal women were the group most likely to believe their health, happiness and sense of control were much better than other women their age.
- Post-menopausal women reported the highest activity levels.

### Introduction

This report examines the relationships among physical activity, weight, stress and menopause. The report is based on a 1993 study conducted by Melpomene Institute and *SELF* Magazine of 334 physically active, 40- to 66-year-old women at various stages of menopause. The purpose of the study was to gain more information on the menopausal experience, and the topics studied included level and role of physical activity, weight issues, diet, stress and personal health.

This was the second Melpomene study of women of menopausal age. The first, an interview study initiated in the fall of 1991, was a pilot study that examined the characteristics of the menopausal experience for 40 women. Questions asked of the Melpomene/*SELF* population were derived from the results of the first study.

### Method

Women who had entered the May 1992 Washington, D.C., Nike Women's Race were invited to participate in the study. An eight-page questionnaire was sent to 699 race participants between the ages of 40 and 66. One follow-up card was mailed to encourage participation. Questionnaires were returned by 334 women.

The questionnaire asked for demographic data including age, race, education, marital status, body build, height and weight. It inquired about weight, diet, stress, physical activity, menstrual history, menopause and resources the participants used to obtain health information. Data compiled from the questionnaires was analyzed using the analytic software program STATISTIX.

### The Participants

Unique to the sample was the importance of physical activity. Ninety-three percent reported that physical activity was "extremely important" in their lives, and 98% were physically active at least two to three times per week. Sixty percent engaged in vigorous physical activity four to six times per week, and 15% were active seven or more times per week.

The sample included 317 Caucasian women (96%), two Asian women (.6%), six Hispanic women (2%), five Black/African women (1.5%) and one woman of biracial/mixed heritage (.3%). Their average age was 46.5 years.

The sample was highly educated: 45% had earned a graduate or professional degree; 21% had earned a college degree; 18% had completed some college work; 12% had completed some graduate work and 3% had earned a high school diploma.

Sixty-eight percent were married; 21% were single; 5% had partners and 5% indicated "other."

Menopausal status was an important variable: 33% of the women reported they were totally without menopausal changes; 27% were at the beginning stage; 10% were at mid-menopause; 3% were nearing the end of menopause; 13% were post-menopause; and 14% had experienced surgical menopause (removal of uterus and/or ovaries).

The height of the participants ranged from 4'10" to 6'2," with a mean of 5'4." Their weight ranged from 85 pounds to 210 pounds, with a mean of 129 pounds. Regarding body build, 61% described themselves as having a medium frame;

*Continued on next page*

34% described themselves as having a small frame, and 5% described themselves as having a large frame.

When asked about dietary patterns, 35% stated they ate balanced, four-food-group meals; 29% indicated they ate diets high in breads and pasta and lower in other food groups; 17% said their diets were high in fruits and vegetables and lower in other food groups; and 9% reported their current diet was vegetarian (may include eggs and dairy).

Ninety percent of the women indicated they controlled their weight in some manner. Seventy-three percent used a combination of exercise and diet as their primary method of weight control. Other methods included exercise alone (10%) and eating less or differently (7%). One participant said she followed a low-calorie diet, and 10% of the sample indicated they did not attempt to control their weight.

## Results

### Frequency of Weighing

More than 50% of the participants reported weighing themselves at least a couple of times per week (see Table 1). Women who said their weight "stayed the same" or "slightly increased" (six to 15 pounds) weighed themselves less often than those who had lost weight.

**Table 1  
Frequency of Weighing**

	No.	%
Every day	68	20.5
Couple times a week	103	31
Couple times a month	82	25
Seldom	79	24

### Weight Change

The majority (75%) stated their weight had "basically stayed the same" (within five pounds either way) during the previous 12 months. Seventeen percent stated their weight had "increased" (six to 15 pounds); 3% said their weight had "greatly increased" (16 pounds or more); 3% reported their weight had "decreased" (six to 15 pounds); and 1% said their weight

had "greatly decreased" (16 pounds or more). Less than 1% of the women chose the response "don't really know" when asked about weight change in the previous 12 months.

A diet high in breads and pasta and lower in other food groups was reported by those women who indicated their weight had "decreased" (six to 15 pounds) or "greatly decreased" (16 pounds or more).

A balanced diet that included the four food groups was the diet most frequently reported by women who had gained weight during the prior year: 44% of these women said their weight "greatly increased" (16 pounds or more), 35% reported their weight had "slightly increased" and 36% indicated their weight "stayed the same."

### Weight Change and Appraisal of Health, Happiness and Sense of Control

Women were asked to compare their level of happiness with other women their age.

The sample as a whole, whether they gained or lost weight over the prior 12 months, felt their health was the "same" as or "better" than most other women their age.

All of the women who stated their happiness was "worse" (n=12) reported either an increase in weight or no weight change over the previous 12 months. However, 90% of the women whose weight had decreased (n=14) reported their happiness was "much better." These results suggest that the idea that happiness is related to stable weight or to loss of weight may have some validity for this sample.

Women who said their weight had decreased were more likely to report feeling they had "better" or "much better" sense of control over their lives than most other women their age (80% chose these two categories). Seventy-three percent of those whose weight had not changed during the previous 12 months reported their sense of control as "better" or "much better" than most other women their age. Only a small percentage (6%) who said their weight "stayed the same" or "decreased" reported their sense of control was "worse" or "much worse" than most other women their age. Of those women

who reported their weight had "increased" during the previous 12 months, 44% said they regarded their sense of control as "better" or "much better" than most other women their age.

### Weight Change and Physical Activity

Weight change was compared to hours per week of vigorous activity.

Exercise levels were very similar regardless of changes in weight. Seventy-three percent of those women who reported their weight had decreased exercised four to seven or more hours per week. Seventy-two percent of the sample who reported their weight had stayed the same indicated their activity levels ranged from four to seven or more hours per week. Interestingly, 66% of the women who reported weight gains of six to 15 pounds also exercised at least four to seven or more hours per week. While the number is small (n=four), all of the women who reported their weight had greatly decreased (16 pounds or more) also exercised four to seven or more hours per week.

### Perception of Weight

Many women internalize an ideal personal weight. Consequently, they perceive themselves to be underweight, slightly underweight, just right, slightly overweight or overweight. Thirty-nine percent of the sample perceived their weight as just right, and 56% perceived themselves as overweight (see Table 2).

**Table 2  
Perception of Weight**

	No.	%
Underweight	1	.3
Slightly underweight	1	5
Just right	19	39
Slightly overweight	150	46
Overweight	33	10

Despite questions about the variability of height/weight tables, they remain a benchmark for women's perceptions. We

compared the U.S. Department of Agriculture (USDA) 1991 chart of Acceptable Weights for Men and Women with the participants' weight perceptions (see Table 3). This table suggests a broader range of acceptable weights than the standard Metropolitan Tables, which many women use as criteria. The USDA table also suggests that it is appropriate to weigh more as you age. Therefore, our results are more striking than if we had used tables which define ideal weight more narrowly.

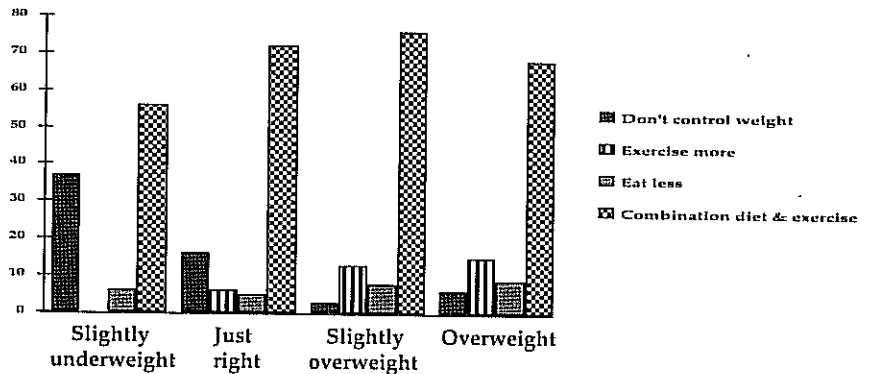
Using this table as a guide, 62% of the women who selected "just right" were accurate and only 3% of those who described themselves as "slightly overweight" were accurate. This means that the weight of 97% of those who described themselves as "slightly overweight" would be classified as "acceptable," according to the USDA table.

While some women's views were only slightly different from the table, others had perceptions that were quite disparate. For example, a 47-year-old woman, whose height was 5'2" and weight was 103 pounds, believed she was "slightly overweight"; according to the USDA table, she was 12 pounds below acceptable weight.

Table 3  
USDA 1991 Chart of Acceptable Weights for Men and Women

Height	Weight in Pounds	
	19 to 34 Years	35 Years and over
5'0"	97-128	108-138
5'1"	101-132	111-143
5'2"	104-137	115-148
5'3"	107-141	119-152
5'4"	111-146	122-157
5'5"	114-150	126-162
5'6"	118-155	130-167
5'7"	121-160	134-172
5'8"	125-164	138-178
5'9"	129-169	142-183
5'10"	132-174	146-188
5'11"	136-179	151-194
6'0"	140-184	155-199
6'1"	144-189	159-205
6'2"	148-195	164-210

Table 4  
Weight Perception and Methods of Weight Control



\*In addition, 3% of women who perceived they were "overweight" reported dieting as a method of weight control.

Another participant, who was 41 years of age, 5'8" tall and weighed 118 pounds, described herself as "slightly overweight"; according to the USDA chart, she was 20 pounds underweight. Most dramatic was the 63-year-old woman who was 5'5" tall and weighed 118 pounds. She perceived herself to be "slightly overweight"; the USDA chart indicated she was 28 pounds lighter than the lowest desirable weight for her height.

### Perception of Weight and Weight Changes

We compared the participants' perceptions of their weights with their weight changes during the previous 12 months. Women who reported their weight had "slightly increased" (six to 15 pounds) were more likely to consider themselves slightly overweight than those women whose weight stayed the same. Of those women whose weight stayed the same, 48% classified themselves as "just right" and 39% believed they were "slightly overweight."

On the other hand, of those who reported their weight had "slightly increased" (six to 15 pounds), 76% considered themselves "slightly overweight," 18% said they were "overweight" and 5% believed their weight was "just right."

### Perception of Weight and Methods of Weight Control

Perceived weight was compared to the methods used by the participants to control their weight (see Table 4).

Ninety percent of the sample reported controlling their weight in some manner. A combination of diet and exercise was the method of weight control reported most frequently by women in all of the weight perception categories.

Ninety-eight percent of those who considered themselves "slightly overweight" indicated they controlled weight; 76% of them used a combination of diet and exercise. Women who perceived themselves to be "overweight" reported similar patterns.

Seventy-two percent of the women who considered themselves "just right" reported using a combination of diet and exercise. Sixteen percent of those women who considered their weight to be "just right" did not feel a need to control their weight.

Fifty-six percent of those who considered themselves "slightly underweight" also used a combination of diet and exercise to control weight, but 37% reported they did not control weight.

Continued on next page

## Perception of Weight and Appraisal of Health, Happiness and Sense of Control

We compared the participants' perceptions of their weights with their appraisals of their health, happiness and sense of control.

Women who considered themselves "slightly underweight" were more likely to report feeling they were in much better health than most other women their age. Ninety-four percent of those who considered themselves "slightly underweight" felt their health was "much better" than most other women, whereas only 58% of those who felt their weights were "just right" felt their health was "much better." Forty-eight percent of those who perceived themselves as "slightly overweight" also felt their health was "much better."

None of the participants, whether they perceived themselves as underweight or overweight, reported that her health was "worse" than most other women. Only one participant, who reported herself as "overweight," appraised her health as "much worse."

Women who reported they were "underweight" were more likely to consider their feelings of happiness "better" or "much better" than most other women their age. Ninety-three percent of the participants who perceived themselves as "slightly underweight" reported their feeling of happiness as "better" or "much better." Only 57% of the women who regarded themselves as "overweight" chose one of these responses.

None of the participants reported considering her happiness "much worse" than most other women. However, 42% of the participants who considered themselves "overweight" regarded their happiness as "worse" than or the "same" as other women their age.

In relation to control, most of the participants felt they were "in control" of their lives. Ninety-three percent, whether they perceived themselves as "underweight" or "overweight," reported feeling they had the "same" to "much better" sense of control than other women their age. Sixty-three percent of the women who perceived themselves as "slightly underweight" reported "a much

better" sense of control than other women their age. A "much better" sense of control was also reported by 40% of the women who considered themselves "just right" and less than 28% of those who considered themselves either "slightly overweight" or "overweight." Very few women of any size felt their sense of control over their lives was "worse" or "much worse" than most other women their age.

## Stress

The participants were queried about the factors that contributed to stress in their lives, their levels of stress and the ways they handled stress. Their answers were analyzed in relation to weight changes and perceptions.

## Stress and Weight

There appears to be no clear relationship between stress and weight. In relation to weight change, women whose weight had increased six to 15 pounds were the most likely to describe their lives as "very stressful."

On the other hand, in relation to weight perception, women who considered themselves "slightly underweight" reported higher levels of stress.

## Stress and Eating

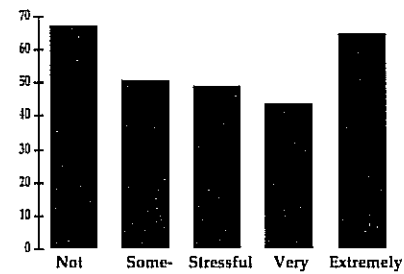
Women who perceived themselves as "underweight" were less likely to report they ate to handle stress. Eleven percent of those who perceived themselves as "slightly underweight" and "just right" said they ate to relieve stress. However, 25% of those who considered themselves "slightly overweight" and 48% of those who felt they were "overweight" reported eating under stress.

We also compared the *level* of stress and the use of eating as a way to handle it. Seventy-eight percent, who said their lives ranged from "not at all" to "extremely" stressful, reported they did not eat to alleviate stress. Of those women who *did* report eating as a way of handling stress, 23% reported "very stressful" lives and 43% reported "extremely stressful" lives.

## Stress and Health, Happiness and Sense of Control

Participants who considered their health "much better" than most other women their age fell at both ends of the spectrum with regard to stress. Sixty-seven percent reported their lives as "not at all stressful," with 65% saying "extremely stressful" (see Table 5). Forty-eight percent of those reporting they regarded their health as "much better" were in the "somewhat," "stressful" or "very stressful" categories. Only one woman considered her health was "much worse," and she reported her life was "extremely stressful." No respondents believed their health was "worse." It appears that stress level alone does not indicate how a woman ranks her health.

Table 5  
Stress Levels of Women Stating  
Their Health Was "Much Better"



Lower levels of stress were reported by women with higher levels of happiness. Forty-four percent of women reporting no stress described their happiness as "much better" than most other women their age.

The next highest group (35%) reporting happiness as "much better" said their lives were "extremely stressful." Therefore, it is difficult to conclude that high levels of stress preclude a sense of happiness.

When stress was compared with sense of control, the only group that stood out were women who indicated their lives were "very stressful." Forty-eight percent of these women believed their sense of control was worse or about the same as their peers. In general, all other groups

reported feeling they were either in better or much better control than other women their age.

### Stress and Physical Activity

Those women who reported high stress levels reported lower levels of physical activity. Thirty-nine percent of the women who said their lives were "not at all stressful" exercised more than seven hours per week. An additional 50% of this group exercised at least four hours per week. Only 14% of women who said their lives were extremely stressful reported physical activity of more than seven hours per week.

### Menopause

Menopause, defined as the occurrence of a woman's final menstrual period, occurs for most women at age 51. The participants classified themselves as being in one of the following stages of menopause:

1. Totally without menopausal changes
2. At the beginning stages of menopause (minor changes in flow; some signs, for example, but not necessarily hot flashes)
3. Mid-menopause (greater distance between cycles, possibly more physiological changes than in the beginning stages)
4. Nearing the end of menopause (still having an occasional period, but very infrequently)
5. Past menopause (last period at least a year ago)
6. Surgical menopause
  - a. removal of uterus only
  - b. removal of uterus and ovaries.

### Menopause and Perception of Weight

Does the stage of menopause influence perception of weight?

Women who were at both ends of the menopausal experience (pre- and post-) were more likely to describe their weight as "just right." Forty-seven percent of those who reported no menopausal changes considered their weight "just right." Thirty-nine percent of the women in the beginning stages of menopause also chose this category.

Of those women at mid-menopause and nearing the end of menopause, 67% considered themselves "slightly overweight" and 17% considered themselves "just right."

Of those women who were past menopause, 51% perceived their weight to be "just right."

### Menopause, Weighing and Weight Control

We did not find reportable relationships between menopausal status and methods used to control weight. Seventy-three percent of the sample reported using a combination of diet and exercise to control weight.

The stage of menopause was compared to the frequency with which the participants checked their weight. Forty-eight percent of those in the beginning stages of menopause checked their weight a couple of times per week. Women nearing the end of menopause tended to check their weight the most.

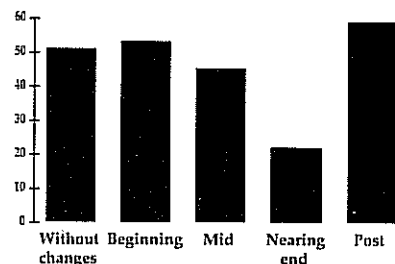
### Menopause and Perception of Health, Happiness and Sense of Control

Post-menopausal women were the group most likely to consider their health, happiness and sense of control "much better" than other women their age. Fifty-nine percent of the post-menopausal women regarded their health as "much better" than most other women their age.

Fifty-one percent of the sample without menopausal changes considered their health to be "much better" than most other women their age. A "much better" comparison was also reported by 53% of the women in the beginning stages of menopause and 45% of those at mid-menopause.

Women nearing the end of menopause were less likely to report "much better" health as characteristic. However, this group still regarded their health as "better" than similarly-aged women. There were no women who regarded their health as "worse," and only one woman, at mid-menopause, reported her health was "much worse" (see Table 6).

Table 6  
Stage of Menopause of Women Stating Their Health Was "Much Better"



Post-menopausal women were more likely than any other group to rate their happiness as "better" or "much better" than other women their age. Women at mid-menopause were the least likely to rate their happiness "better." Additionally, women nearing the end of menopause were more likely to choose "better" than "much better" as the category that best described them.

Forty-one percent of post-menopausal women regarded their sense of control over their lives as "much better" than other women their age. This is a higher percentage than all other groups in the "much better" category. Only 11% of women nearing the end of menopause felt they were in "much better" control.

### Menopause and Physical Activity

Women who were post-menopausal (39%) were most likely to engage in physical activity more than seven hours per week. Thirty-three percent of women nearing the end of menopause also reported a physical activity level of more than seven hours per week. The group least likely to report this high level were women at the beginning stages of menopause (20%).

Continued on next page

## Discussion

### Weight Consciousness

The physically active women in this sample were aware of weight changes. Indeed, no matter how they perceived their weight, less than 1% chose the item "do not know" when asked what had happened to their weight in the past year. More than 55% classified themselves as overweight.

### Weight Change and Physical Activity

Seventy-five percent of the respondents said their weight basically stayed the same over the previous 12 months. Yet, this did not seem to happen automatically: 90% of the women said they controlled weight in some manner. Seventy-three percent said they combined exercise with diet, rather than relying on one or the other. Ten percent said they specifically increased exercise levels to control weight.

While popular diet programs and the scientific literature both suggest a link between weight loss and exercise, it is impossible to predict weight loss by knowing, for example, that a woman runs seven hours a week. While some women reported losing weight at relatively high levels of physical activity, this was not universally true.

Women in this study offered further proof of the individual nature of weight loss: 73% of those who exercised four to seven hours per week lost weight, but 72% of those whose weight did not change exercised at the same level. Additionally, 66% of those women who exercised four to seven hours per week *gained* six to 15 pounds. Women are often encouraged to start exercise programs to aid in controlling or losing weight. This data questions the effectiveness of that advice for women 40 years of age and older.

### Weight Perception and Health, Happiness and Sense of Control

Fifty-six percent regarded themselves as slightly overweight. However, when we

compared women's perception of their weight with the USDA table, we found that the weight of 97% of the women who considered themselves slightly overweight was actually within the acceptable range.

Weight perception also made a difference in how women rated their health compared with other women their age. Women who considered themselves slightly underweight were more likely to report believing they were in much better health. Women who classified themselves as just right or slightly overweight reported lower perceptions of health.

However, in spite of many believing they were overweight, this physically active group overall believed it was healthier than the general population. This belief that physical activity contributes to a perception of better health was also reported in the first Melpomene menopause study, which compared active and inactive women. Active women believed their health was better than most, whereas the inactive women classified their health as about the same ( $p=.002$ ). Women who were moderately active believed their health was better than those who were inactive, but there was no difference between moderately and highly active women ( $p=.01$ ).

Recent research by Idler and Casl documents that a person's opinion of her own health is a better predictor of mortality than other objective factors, such as physical symptoms, extensive exams or lab tests.

In our sample, happiness was positively related to the perception of being slightly underweight. Women who considered themselves overweight were more likely to say their feelings of happiness were the same or worse than others their age. While women might wish it otherwise, this suggests that feeling that one is thin contributed to happiness.

While the study participants may not have been satisfied with their current weight, as a group they felt their sense of control over life in general was the same to much better than others their age. Those women who were slightly underweight, however, were more likely to say they were in much better control.

### Controlling Weight

We also asked about control in relation to weight. Only 10% of the respondents said they did not consciously control weight.

For most of the sample, however, controlling weight meant weight remained constant. It was therefore encouraging to note that weight gain or loss did not influence how women rated their health.

Happiness did not fare as well. While not many women rated their happiness as worse than others, all of those who did reported either an increase or no change in weight over the previous year. Conversely, 90% of the women who had lost weight described their happiness as much better. Women whose weight decreased were also more likely to report their sense of control was better or much better than other women their age.

### Stress, Physical Activity and Weight

The relationship of stress to weight has not been thoroughly studied. There is no clear indication from this data that weight gain led to additional stress or that stress caused weight gain.

The importance of physical activity to help handle stressful situations regardless of weight was underscored by the fact that 90% of the women said exercise helped reduce stress. On the other hand, those women experiencing the most stress also reported lower levels of physical activity.

The women in this study said that time constraints were the number one obstacle to maintaining physical activity. For some, knowing the value of exercise did not guarantee they could fit it into their schedules.

### Menopausal Status and Weight

Weight gain was one of the concerns of the menopausal women who participated in an earlier Melpomene study. In this study, therefore, we were interested in comparing menopausal status with the participants' perceptions of their weight and their weight gain or loss.

Women who classified themselves as mid-menopausal or near the end were the most likely to report they were slightly overweight; only 17% considered themselves "just right." There appeared, however, to be a positive change post-menopausally. Fifty-one percent of the women past menopause chose the "just right" category to describe themselves. This appeared to be a change in perception, as there was little evidence that women lost weight once they were post-menopausal.

Post-menopausal women were most likely to believe that their health, happiness and sense of control were much better than other women their age.

This is encouraging data that is supported by anecdotal comments from women who say that the end of menopause brings an end to the uncertainty regarding the length and severity of menopausal change.

Age may also be a positive factor. Melpomene's earlier membership study found that older women, especially those 60 years and older, were less stressed and happier with their lives than younger women.

New books on menopause and aging by Betty Freidan and Germaine Greer suggest that older women have more freedom to be themselves, are less concerned with societal standards and more adventuresome. They hark back to Margaret Mead's comment about the joy of post-menopausal zest.

This study suggests that one reason for this zest is physical activity. Women who were post-menopausal were the most likely to exercise seven or more hours per week. Thirty-nine percent of post-menopausal women reported this pattern, compared with only 20% of women who were at the beginning stages of menopause. Time is probably the major factor here: aging women report they have fewer responsibilities and more time for themselves.

High levels of physical activity in this study were also associated with lower stress levels. Melpomene studies over the past 12 years document that women equate physical activity with feeling better and with improved energy levels.

## Conclusion

While weight was an issue for the sample of physically active women, it did not appear to negatively influence the belief that they were in better or much better health than other women their age. Additionally, women who were post-menopausal were more likely to believe that their weight was just right. This appears to be a perceptual rather than an actual change.

Overall, post-menopausal women found more time for exercise, and they were also the group most likely to say their health, happiness and sense of control were much better than most women their age. This supports the belief of 97% of all respondents: physical activity is extremely important. It further suggests that age has numerous positive features. ●

*Thanks to: Kathrine Switzer for connecting us to SELF magazine; to senior editor Ellie McGrath and editor-in-chief Alexandra Penney for their support of this research; to Marjorie Fruin for help with design and statistical analysis; to Betsy Moore and Maureen Reid for help with the manuscript.*

We are interested in hearing how our members feel their weight influences their overall sense of well-being. We encourage your comments and responses to any of the articles in this *Journal*.