DEVELOPMENTAL SKILLS TRAINING (DST) FOR PEDIATRIC AND ADULT OBESITY TREATMENT

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Table 2. Changes in dependent variables for test and control groups at 3* and 15† months compared with baseline

variable‡	month of study	SHAPEDOWN group (no. = 34)	p value	no-treatment group (no. = 29)	p value
knowledge	3		<.001	0.63±2.28	
	15	2.94±2.68#	<.001	0.53±2.19	NS
self-esteem	3	3.73±2.84	<.005	0.52±1.34	¶
	15	0.88±1.50	<.001	0.47±1.02	NS
depression	3	1.50±1.71	<.005	0.62±1.67	<.00
	15	0.78±1.29	<.005	0.70±2.81	5
behavior	3	1.06±3.10	<.005	6.82±9.24	<.01
	15	12.37±10.49	<.05	8.85±12.80	NS
relative	3	12.85±15.25	<.001	−0.3±6.61	NS
weight	15	−5.9±6.75	<.01	−0.1±13.20	NS
		−9.9±14.98			NS
					NS
					NS

*End of treatment for SHAPEDOWN group.
†One year post-intervention for SHAPEDOWN group.
‡Higher scores indicate: greater knowledge of weight management principles, higher self-esteem, less depressive affect, greater frequency of behavior associated with weight loss or normal weight, and greater deviation above mean for height, age, and sex.
#Mean ± standard deviation
¶NS = not significant.

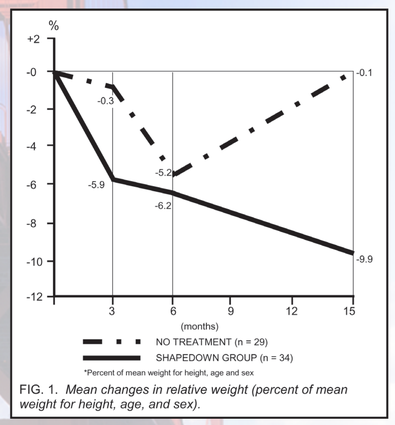


FIG. 1. *Mean changes in relative weight (percent of mean weight for height, age, and sex).*

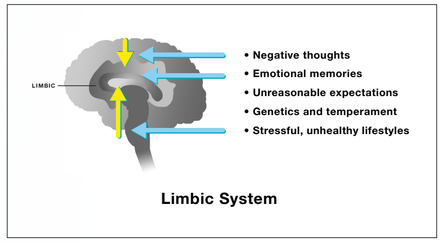
Mellin, L. M., Slinkard, L. A. & Irwin, C.E., Jr. (1987). Adolescent obesity intervention: Validation of the SHAPEDOWN program. *Journal of the American Dietetic Association,* 87, 333-338.

DST — A New Paradigm

DST proposes a new paradigm for the prevention and treatment of pediatric and adult obesity. In this model, obesity is not identified as the treatment problem, but as a symptom of an underlying insufficiency of developmental skills compared to the individual need for these skills based on genetics and environmental factors. This skill insufficiency results in a lower capacity to regulate the allostatic response to both internal and external stressors and impedes psychological development. Over time, this increases the allostatic load and contributes to a broad spectrum of changes that promote obesity, to its refractory and intractable nature, as well as to other psychosocial, behavioral and health problems.

The goal of DST is to enhance the developmental skills of obese patients to produce and maintain changes in a broad spectrum of health-related factors including obesity without: 1) treatment dependency, and 2) behavioral substitution (e.g., overexercise, smoking, substance abuse or eating disorders).

The Limbic System and the Allostatic Response



Limbic System

The limbic system processes stressors from the external environment and the internal milieu. When the total perceived stress is greater than the individual's capacity to process it, an allostatic response is initiated which influences stress hormones and neurotransmitters in ways that alter psychological, behavioral and physiologic parameters that influence the development and exacerbation of obesity and other psychological, social and behavioral problems.

DST is a comprehensive, transdisciplinary program that equips patients with the two most fundamental developmental skills, self-nurturing and effective limit-setting, that are associated with resilience. In DST, participants are taught to monitor their state of allostatic response and use both developmental skills and lifestyle changes to decrease stress and decrease the frequency and duration of allostatic responses. Repeated practice of the skills is hypothesized to retrain the limbic brain to decrease the frequency, intensity and duration of the allostatic response, thus modulating the stress hormones and neurotransmitters that fuel appetitive cravings. This improves behavioral compliance with physical activity and nutritional recommendations in obese patients as well as other indices of health and well-being.

The goals of DST are: 1) long-term, post-treatment maintenance of weight loss and related health indices, 2) prevention of symptom substitution, such as problem drinking, smoking, excessive exercise and eating disorders, and 3) the promotion of resilience.

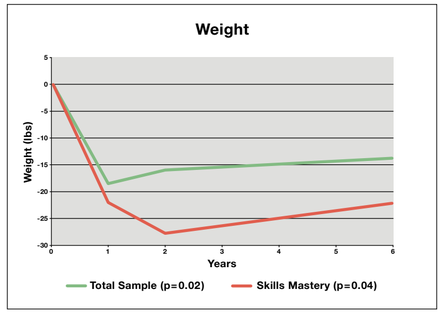
Training and Program Information

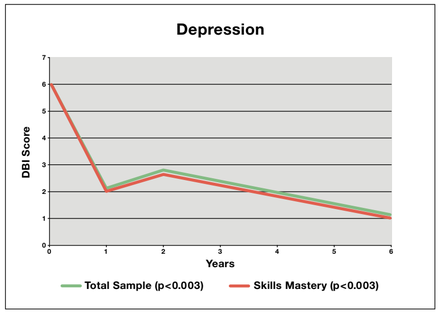
Health professionals who have completed specialized training provide DST to children and adults. It may be conducted individually, in small groups or larger community settings. The format involves materials (workbooks and audio instruction) that may be used in both in person and distance learning conditions. The Shapedown Program is the application of DST for children and adolescents and The Solution Method is its application for adults. Pediatric programs are conducted in 10-week sessions and material costs are $16 per month. Adult programs are conducted from one to 18 months and material costs are $33 per month.

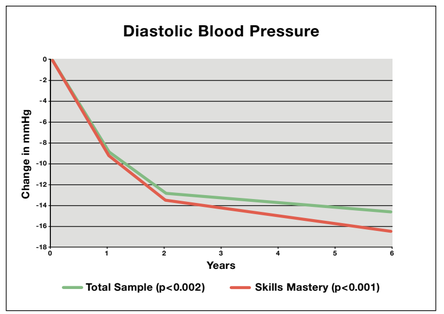
Adult DST: The Solution Method:
www.thepathway.org
415.457.3331
health@thepathway.org

Pediatric DST:
The Shapedown Program:
www.childobesity.com
415.453.8886
shapedown@aol.com

The Institute for Health Solutions is a non-profit (501c3) organization. For training or research information:
health@thepathway.org







Mellin, L. M., Croughan-Minihane, M., & Dickey, L. (1997). 2-year trends in weight, blood pressure, exercise, depression and functioning in adults trained in developmental skills. *Journal of the American Dietetic Association,* 97, 1133-1138.

Mellin, L. M. (1999). "Developmental Skills Training for the Treatment of Obesity: Integration of Decades of Research." Presented at the American Dietetic Association Annual Meeting, Denver, CO.

Pediatric Outcomes

The effectiveness of the adolescent obesity intervention SHAPEDOWN was evaluated for 15 months through a randomized experimental design study. Test groups (n = 37) participating in the intervention were compared with a no treatment control group (n = 29). Participation in the group application of the program (14 weekly, 90 minute sessions and two parent sessions) was associated with significant improvement in relative weight [actual weight/national normative weight(100)], weight-related behavior (Habit Inventory), self-esteem (Rosenberg's Self-Esteem Scale), depression (Rosenberg's Depressive Affect Scale) and knowledge of weight management concepts (SHAPEDOWN Knowledge Test) at post-treatment (3 months) and at 1-year follow-up (15 months). Change in relative weight for the test group was -9.9 kg +/- 14.9% compared to -0.10 kg +/- 13.2% for the control group. At month 15 of the study period, weight change in the test group compared with controls was -5.15 kg.

Adult Outcomes

Mellin, Croughan-Minihane & Dickey (1997) report 2-year outcomes of the application of DST in adults. Twenty-two subjects (mean age = 43.4 +/- 8.5 years and mean BMI = 33.1 +/- 5.3 kg) completed a group DST intervention (mean = 18 weeks, 2 hours per week) conducted by a registered dietitian and mental health professional. Subjects' weight decreased throughout the 24 months of the study: -4.2 kg (3 months), -6.0 kg (6 months), -7.0 kg (12 months), and 7.9 kg (24 months). Results from baseline to 24 months were significant: weight ($p < .01$), systolic blood pressure ($p < .02$)) exercise ($p < .001$.

Nineteen subjects who participated in the above study were available for follow-up at six years post-treatment (Mellin, 1999). Treatment effects continued and were significant for weight, diastolic blood pressure, exercise and depression.