

“Study Designs and Analytic Strategies for Environmental and Policy Research on Obesity, Physical Activity, and Diet”

April 8, 2008, Washington, DC

**Rationale for Environmental and Policy Solutions to Obesity
And Research Needed to Inform Policy**

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General ideas that may come at the beginning or be woven throughout or in conclusion

In the context of healthy eating, physical activity, sedentary behavior, and obesity the call for “environmental and policy change” refers to the need for initiatives that will make it easier and normative for people to adopt and maintain recommended behaviors and achieve healthy weights. We need to change identify both policies and programs that can facilitate changes in the relevant environmental settings: physical, economic, sociocultural, and psychosocial environments.

A partial understanding that these changes are critical to obesity prevention and control has already been established, exemplified by the CDC technical and financial support of coordinated environmental and policy changes in states. I say ‘partial’ because the efforts to change environments for eating and physical activity are separate from the domain of environmental health, which means that we probably not yet able to fully leverage what we know about environmental changes and how to achieve them within the domain of obesity programs. This may be merely a matter of terminology. However, it may also reflect a true lag in our willingness to accept the environmental component of obesity causation.

A partial understanding that environmental and policy influences on obesity are critical foci for research is evident in several recommendations and statements of intent included in reports of the 2003 NHLBI Think Tank on Obesity Research and the overall NIH Strategic Plan. Here, the assessment that the understanding is partial relates to the fact that this area of research is relatively unfamiliar, unpopular (with many stakeholders), underdeveloped with respect to methodology, and potentially risky politically. We need to consider changes to existing policies as well as the basis for development of new policies. To engage in the direct study of policy, particularly policies that are extant or proposed and which will have clear impacts on public and private vested interests, forces an uncomfortably close link between science and politics. Keeping a distance in which the presumed objectivity and neutrality of science is preserved is preferred and safer. On the other hand, keeping such a distance detracts from the research relevance.

Some research along these lines has been funded under special initiatives by both the NIH and the CDC. The NIH research has focused on school and worksite environments for example. CDC has funded research related to schools and worksites (?) and well as community environments and also multi-level projects involving communities and schools for example (e.g., some REACH 2010 studies and some through the CDC Prevention Research Centers). These initiatives are an important step, allowing both exploration of the potential and limitations of this type of research and helping to create a place for this type of research in the academic community. Much of the community oriented research involves CBPR approaches, which involves additional unfamiliar and potentially risky methodological and funding issues. Of interest, the CBPR “movement” within NIH began in the NIEHS.¹ This ‘environmental’ research experience may offer lessons and important precedent for obesity prevention.

Specifics of the rationale to be discussed and illustrated

What we know (adapted from forthcoming AHA obesity prevention paper)

1. The rapid rise in obesity on a population level—associated with changes in quantities of food available, marketed and consumed, along with the very low level of obligatory physical activity for most people—makes obesity prevention particularly challenging.

¹ See O’Fallon LR, Dearry A. Community-based participatory research as a tool to advance environmental health sciences. Environ Health Perspect. 2002 Apr;110 Suppl 2:155-9.

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2. Obesity now affects 1 of every 3 U.S. adults and nearly 1 in every 5 U.S. children and adolescents; similar proportions have weight levels in the overweight or at risk of overweight range.
3. Preventive efforts to limit the number of people who gain weight to the point of becoming overweight and obese and to also limit the severity of obesity are essential. Weight loss can mitigate many adverse effects of obesity, but weight loss attempts are often unsuccessful and access to obesity treatment is limited.
4. Prevention efforts directed to the whole population are of high priority, with extra effort to make sure that these initiatives reach ethnic, gender, or other key risk subpopulation. The goal is to make it easier, more socially acceptable, and more personally rewarding for the *average individual* (not just the highly motivated few) to adopt and maintain a healthful eating and activity patterns.
5. Obesity prevention presents a scenario already well-known in the prevention of cardiovascular diseases and cancer (tobacco) in that it requires a broad range of policy and environmental change strategies to promote changes in food intake and physical activity, including interventions that are far “upstream” of the more familiar, individually-oriented clinical approaches. The need to achieve balance energy intake with energy expenditure, poses challenges that go beyond those associated with affecting either dietary composition or physical activity level alone.
6. The concept of policy level interventions to change contexts for individual behavior is well known from the experience with tobacco.
7. Targets for action to prevent obesity include the spectrum of influences on food access, food intake, and physical activity, including globalization markets and media, technological advances, and programs and policies relating to agriculture, transportation, housing, education, social welfare, urban design and community development. Initiatives may target focal points and settings relevant to the neighborhood, local, state, regional, national or international level, sometimes in combination. Necessary and complementary strategies include advocating for new or amended policies and legislation and for changes in the internal practices of agencies and institutions and may involve community mobilization and coalitions and networks.
8. Published evidence reviews indicate a dearth of obesity prevention research to date, especially when compared to the vast amount of research on obesity treatment. Current evidence of promising strategies comes from community programs as well as formal field research or demonstration projects.
9. Environmental and policy changes undertaken to prevent obesity require careful evaluation with respect to implementation and impact, including potential unintended consequences. Many are natural experiments or are otherwise unsuited for randomized experiments, posing challenges for identifying research valid and appropriate research designs.
10. Population approaches to obesity prevention require expertise and actions beyond the typical expertise and roles of health professionals. However, health professionals who recognize the scope and complexity of what is needed can identify potential approaches and partners to contribute to solutions both within and outside of their day to day practice. This also extends to research on obesity prevention.

To progress to the point where research not only catches up with but also helps to lead us to the directions that will be successful in obesity prevention, we need to continue rehearsing the arguments as to why environmental and policy changes are so essential. Clarifying the arguments and incorporating supporting data as they emerge will help to motivate and render more normative the type of research that needs to be done. It is especially helpful to do this without first considering too many of the barriers or concerns. Preoccupation with the impossible interferes with the notion of what is possible.

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Following are highlights of four elements that seem key to the rationale for environmental and policy changes and related research: theoretical/conceptual, empirical, historical and practical components, as follows:

1. Theoretical/conceptual

- Epidemiologic transition
- Ecological model and IOTF causal web, with examples of policy targets and instruments
- Social learning theory
- [Counter to this theoretical perspective is free-market theory; we need to identify specifics of why this theory doesn't apply as such; this is a critical area for policy research]

2. Empirical/experience-based [consider which evidence might be most convincing to research policy makers about the essentiality of policy and environmental research]

- global nature of the epidemic
- observations of populations shifts in BMI levels
- observations of disconnect between interest in weight control with weight levels
- changes in food availability; composition, marketing, etc
- some changes in physical activity determinants
- studies modeling contribution of changes in food intake with epidemic (Bleich; Jeffery and Harnack)
- ecological associations of environmental drivers with high risk settings (e.g., African American communities; low income communities)
- evidence of 'contagion', i.e., Christakis paper
- observational and experimental studies showing that people respond to cues, e.g., Rolls work on portion size; Grier work on fast food exposure of parents; advertising findings from IOM report

- [The counterargument is individual responsibility; the evidence that individuals have poorly developed controls at the upper end of food intake is critical to refuting this argument; perhaps also some of Wansink's experiments in the realm of mindless eating; i.e., eating patterns are less purposeful and more incidental to other activities and less likely to involve the controls that are present; also—there are logical arguments to the effect that people's level of individual responsibility has not necessarily shifted while the food environment has changed; relevant arguments for physical activity are less clear]

3. Precedent

- important role of policy and environmental changes in other public health successes, particularly tobacco; lead
- give other examples
- use nutrition policy model to show that association of food constituent (can be extended to behavior) with harm is impetus for policy action
- point out that the ability to measure prior policy actions at various levels and in various settings provides a reference point for understanding some of the methodological issues; much better to look there than in the biomedical/behavioral literature on obesity
- [counterarguments relate to ideological disagreement with using policy in this way as well as the “food is not tobacco” argument. However, there are many precedents in nutrition policy]

4. Practical

- Population wide solutions that can be fostered by policy and environmental changes become highly cost effective when a problem is in high prevalence (a Geoffrey Rose principle; prime area for confirmation by research)

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- Policy and environmental changes exist and are being created:
 - Research on existing policies such as federal nutrition programs is critical as these programs may be a part of the problem if not aggressively part of the solution; in addition, they reach high risk populations selectively
 - If these are not studied and incorporated into research the more narrowly framed research that is done will be less valid and relevant
 - Studying the processes involved can inform theory and research
 - Policy and environmental changes may have adverse effects—it is critical to track these as well—effects on obesity or on unrelated, unintended outcomes
- Similar to the above, even where policy and environmental contexts are relatively stable, these influences are integral to obesity related behaviors, prevention programs, and treatment programs and are extremely powerful. It is difficult to think of any solutions to obesity that will not be affected by policy and environmental variables at some level.
- [Counterarguments relate to barriers to getting a handle on what is going on; traditional funding mechanisms; the fact that many key factors are in other macro domains; difficulties in working with the private sector; the fact that policy makers use research selectively; the inability to use “strong” research methods, etc; demonstrating that are rigorous although different mechanisms for research is one way to address this, i.e., from other fields; also; using funding partnerships with different degrees of flexibility and creating some new rapid turnaround mechanisms, evaluation approaches etc are other ways to address this. For the aspects that are really not in our sphere of influence or study (if there are any such), recognizing that not all questions or solutions will be addressed by research while still affecting the research process would be important.

Conclusion

The emphasis given to this part of the spectrum of research needs to be brought on par with its impact on the problem

Policy and environmental change research needs to be linked to other research—so that the response to the changes can be tracked and the effects of policies and environments on responses can be tracked