

# Can a Stage-of-Change Intervention Get Young Adults to Eat More Fruit? ...More Vegetables?

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# NC219 team studies F/V behavioral interventions for young adults



- ◆ Multi-state Hatch project = umbrella group
- ◆ NRI grant to Neb with input from NC219 team studies S.O.C. for F+V in young adults
- ◆ IFAFS grant to WI with subcontracts to 9 states; studies SOC for F & V separately in low-income young adults



**11 states:** Alabama; Rhode Island; Kansas; Oregon; Maine; South Dakota; Michigan; Wisconsin; Nebraska; New York; Iowa

# IFAFS objectives

- 1. Increase fruit & vegetable intake behaviors of economically disadvantaged young adults**
- 2. Determine effectiveness of stage-tailored intervention modalities based on the Trans Theoretical Model**
- 3. Extend findings to a specific set of recommendations for community-based practitioners**

# US fruit and vegetable consumption

- Only 23% of U.S. adults report 5 or more servings of fruit and vegetables per day

	<b>Males, 18-24 y</b>	<b>Females, 18-24y</b>
Fruit servings	0.6	0.8
Vegetable servings	2.3	1.7

*CDC Division of Nutrition and Physical Activity, 5-A-Day Fruit and Vegetable Surveillance, <http://apps.nccd.cdc.gov/5ADaySurveillance>*

# Why the trans-theoretical model (TTM)?

- TTM integrates several behavioral theories to describe how & why change occurs
- TTM tailors intervention to stage of readiness to change
- TTM useful with those unmotivated to change

# IFAFS subjects

- ◆ **18-24 yr age**
- ◆ **<185% Poverty Index**
- ◆ **Not enrolled in a nutrition education program**
- ◆ **“Staged” on entry for current fruit & vegetable intake**

# Stage of change

	<b>Precont %</b>	<b>Cont %</b>	<b>Prep %</b>	<b>Action %</b>	<b>Maint %</b>
<b>Fruit</b>	<b>14.4</b>	<b>13.1</b>	<b>16.2</b>	<b>10.0</b>	<b>46.3</b>
<b>Veges</b>	<b>22.8</b>	<b>20.9</b>	<b>27.1</b>	<b>2.9</b>	<b>26.2</b>

from previous NC219 research



# Fruit and vegetable servings by stage of change

	<b>Precont</b> Mean $\pm$ SD	<b>Cont</b> Mean $\pm$ SD	<b>Prep</b> Mean $\pm$ SD	<b>Action</b> Mean $\pm$ SD	<b>Maint</b> Mean $\pm$ SD
<b>Fruit</b>	<b>1.1 <math>\pm</math> 0.5</b> <i>a</i>	<b>1.5 <math>\pm</math> 0.7</b> <i>b</i>	<b>1.8 <math>\pm</math> 0.8</b> <i>c</i>	<b>3.0 <math>\pm</math> 1.4</b> <i>d</i>	<b>4.0 <math>\pm</math> 2.0</b> <i>e</i>
<b>Vege</b>	<b>1.9 <math>\pm</math> 0.9</b> <i>a</i>	<b>2.4 <math>\pm</math> 1.2</b> <i>b</i>	<b>2.5 <math>\pm</math> 1.2</b> <i>b</i>	<b>3.1 <math>\pm</math> 1.8</b> <i>b</i>	<b>4.0 <math>\pm</math> 2.4</b> <i>c</i>

Different letters indicate significant difference at P<0.01

# IFAFS timeline: 2001-5

- ◆ 1<sup>st</sup> year:

focus groups/interviews & readability assessments to refine intervention materials & protocols

- ◆ 2<sup>nd</sup> & 3<sup>rd</sup> year:

2000 subjects are being recruited to receive the 6-mo mail +phone intervention (or control mailing plus assessments), followed-up at 12 mo

- ◆ 4<sup>th</sup> year:

evaluation of program efficacy; extend findings to community-based educators

# Year 1

- **Conducted over 250 interviews with 18-24 yr-olds in 10 states**
  - **Analyzed for likes, dislikes, decisional balance, processes of change, self-efficacy by stage**
- **Developed magazine and newsletter formats/designs**
- **Developed individual-tailoring report system (Rhode Island)**

# Examples of focus group results: PRECONTEMPLATION



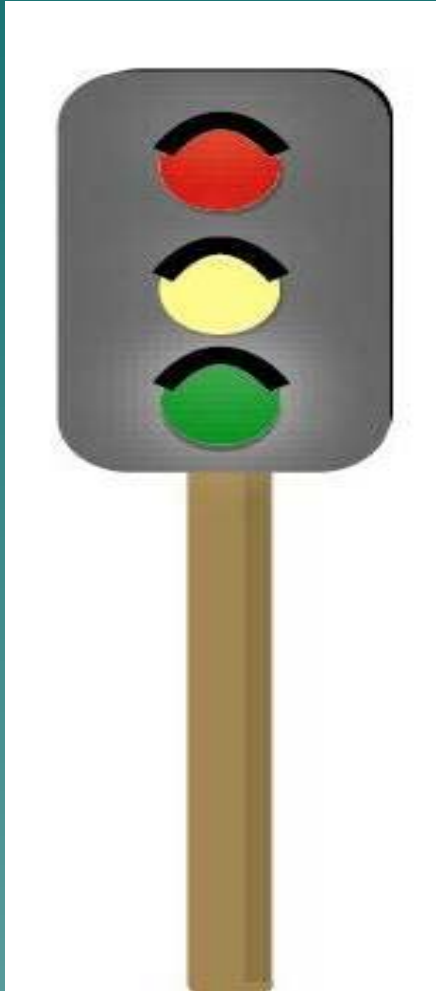
- **“This week I don’t even have time to shave – you expect me to eat fruits and vegetables?”**
- **“I have eaten the same stuff all my life, why should I change?”**

# CONTEMPLATION



- “I probably should start eating fruits and vegetables so my kids will. They copy their parents.”
- “I used to eat vegetables and fruits, but not all the time. I think I should eat more every day.”

# PREPARATION



- **“I’ve always known I need to eat better anyway. I just need some tips and a place to start.”**
- **“It’s easy if you just put your mind to it. I’m going to try to set a goal for myself to eat more fruits and vegetables.”**

# ACTION

**MAINTENANCE**

**6 MONTHS**

**AHEAD**

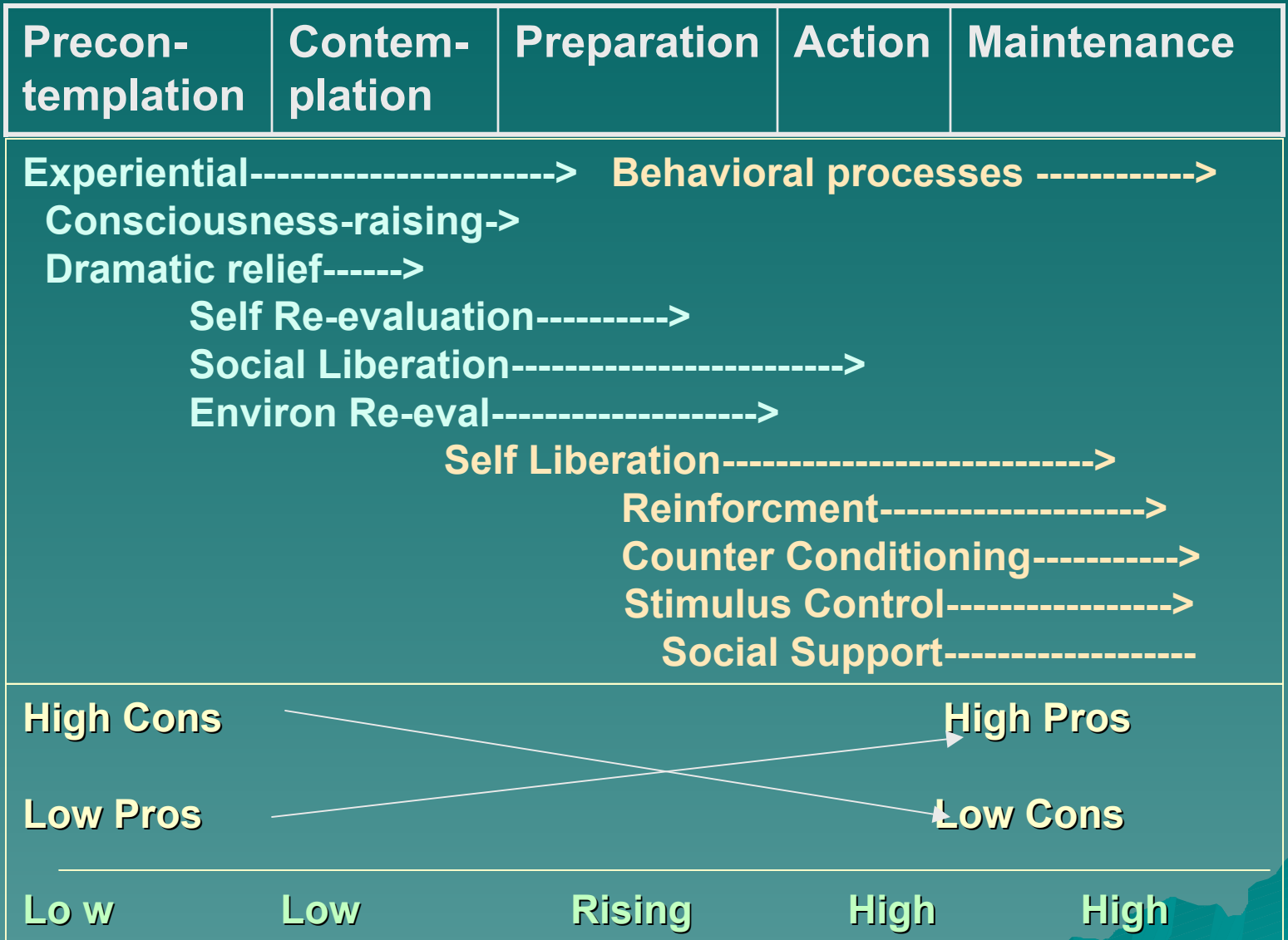
- “When I’m putting stuff together on a plate, I say, OK, I have to get all the food groups so I better grab a veggie.”
- “I like to set a good example for my daughter.”

# MAINTENANCE



- "I've been a fruit and vegetable person all my life. My mom got me into it."
- "I like fruits and vegetables, but I guess I also want to eat them because it makes me feel better knowing I'm eating something healthy."

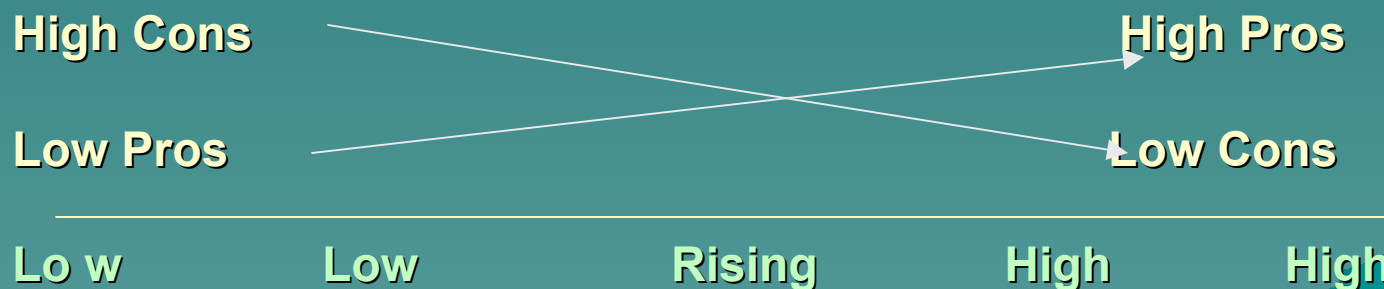




Processes of change

Decisional Balance

Self-Efficacy

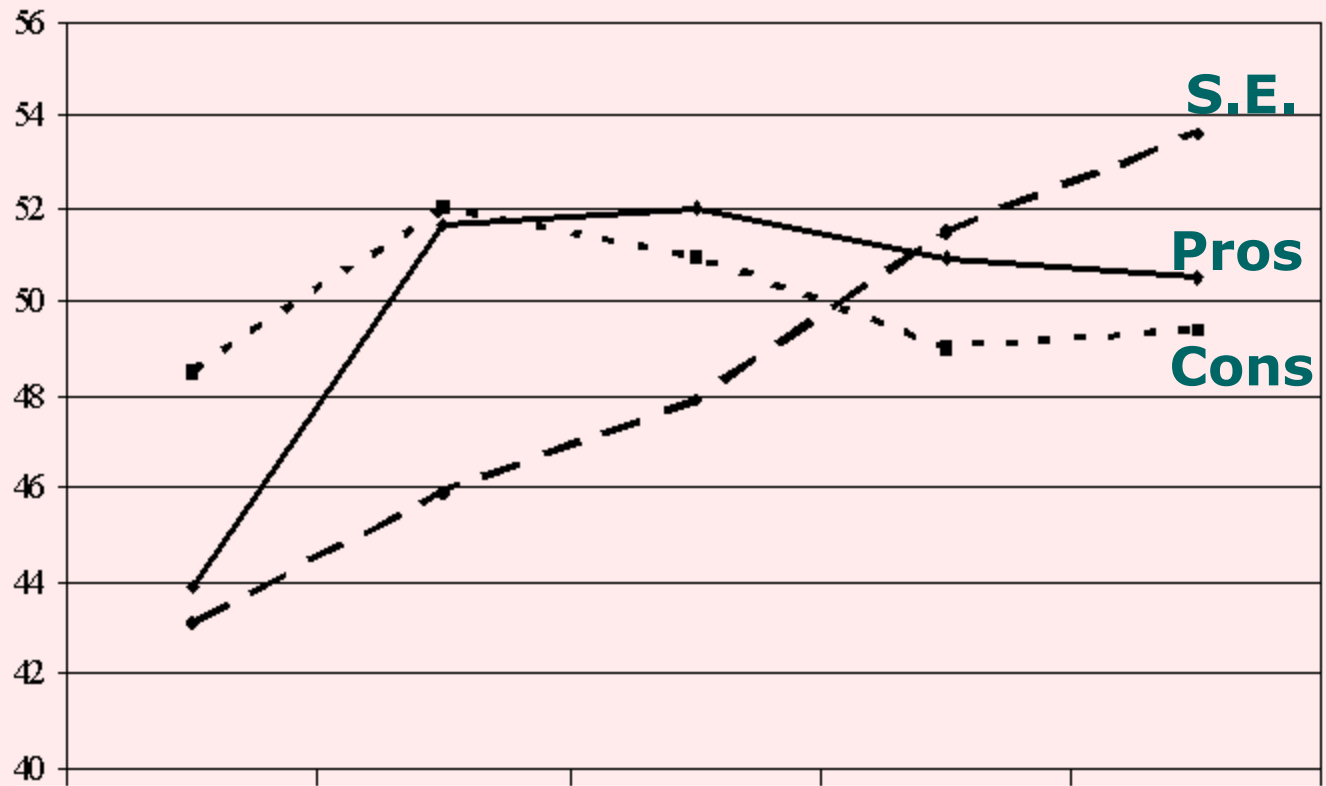


# Key Points

- Behavior change results from applying stage-appropriate interventions
- To move from precontemplation to action requires:
  - **Decrease in perception of barriers (cons) by 2 SD**
  - **Increase in perception of benefits (pros) by 1 SD**
  - **Focus on processes used in each stage**
  - **Developing self-efficacy**

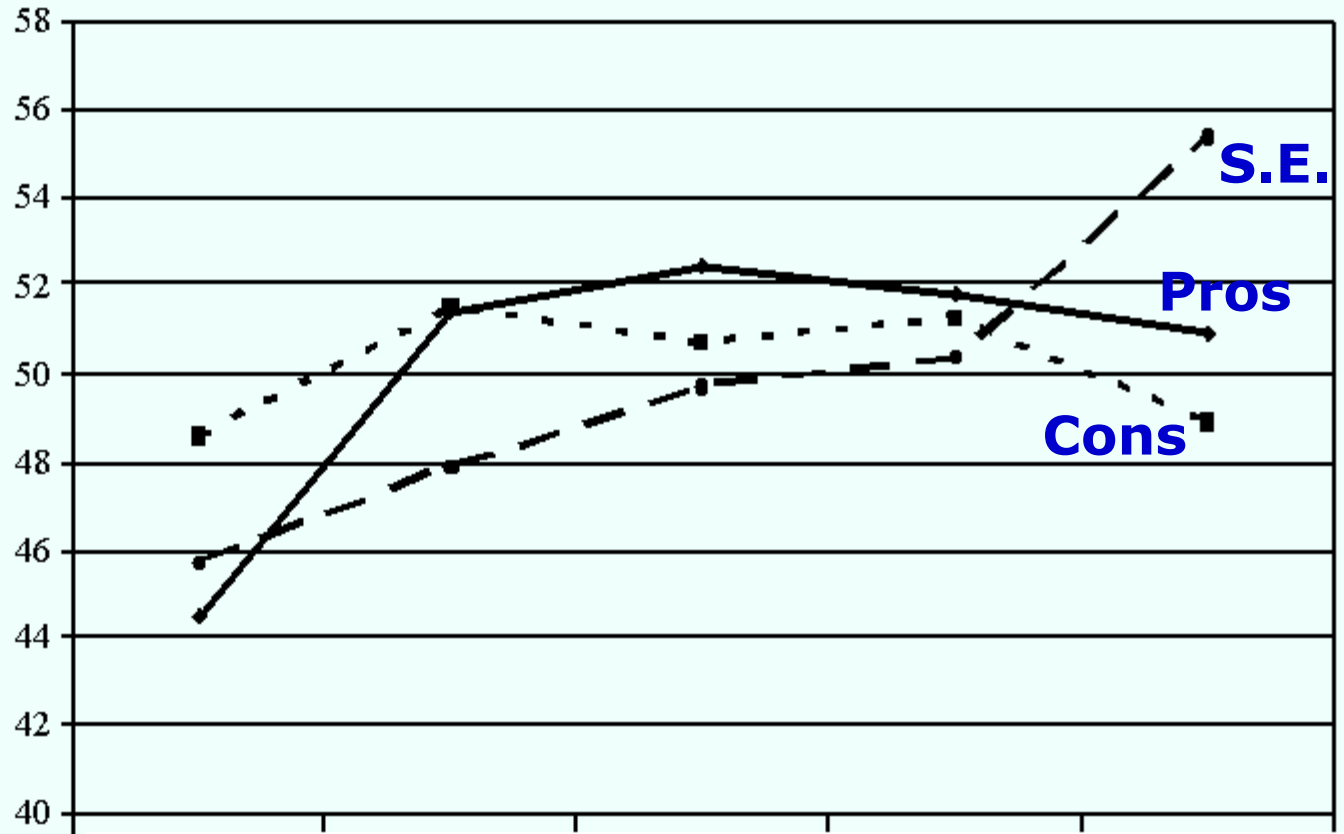
Prochaska, Velicer The Transtheoretical Model of health behavior change. *Amer J Health Promotion*. 12:38-48, 1997

**Title:**  
Decisional  
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Ma J et al. *American Journal of Health Promotion* 16; 157-166, 2002,

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# IFAFS Intervention

- ◆ **4 F and 4 V Newsletters**
  - Tailored to stage, easy to read, pretested
- ◆ **1 Magazine**
- ◆ **2 Individualized Reports**
- ◆ **2 Educational phone calls**
  - Encouragement, goal setting & clarification of newsletter messages

# The F&V Connection

to feeling good and looking hot

## Thinking About Eating More Vegetables



The last time you answered a survey about vegetables, you were thinking about eating 3 servings a day. You are moving in the right direction, but you are not ready to make any big changes right now. These newsletters will help you start making small steps towards eating healthy. Remember you don't have to change overnight... Instead of worrying about big changes, why not think about eating a little more of the vegetables you like to eat.

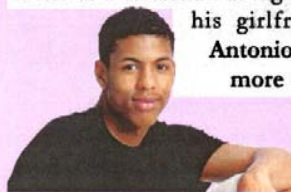


### Did You know...?

- 😊 Eating more vegetables can help you and your family fight off colds and infections.
- 😊 Most vegetables are very low in calories and can help you lose weight.
- 😊 Eating more vegetables can make you look good by giving you healthy skin.
- 😊 Eating more vegetables keeps the doctor away and also the dentist. Vegetables are nature's toothbrush. They help keep your teeth and gums healthy.

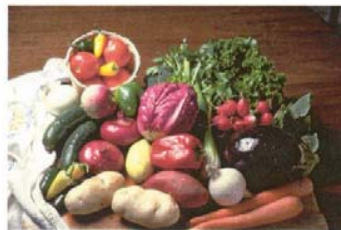
## Meet Antonio

Antonio works two jobs to make ends meet. He works at a factory during the day and buses at a restaurant at night. He lives with his girlfriend, Leandra. Antonio, are you eating more vegetables?



"I would like to eat more vegetables but we don't have time to make them. Many times when we buy vegetables, we end up throwing them away because they spoil in the refrigerator. It's just a waste of money."

Antonio knows that eating more vegetables is important. He has good reasons to want to eat more. The problem is that he is having a hard time eating more vegetables.



Check out some of the tips for eating more vegetables on the other side.



# The *F&V* Connection

*to feeling good and looking hot*

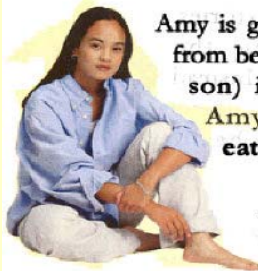
## Thinking About Eating More Fruit



When we called you on the phone, you answered some questions about your eating habits. You said that you were still thinking about eating more fruit. You have been thinking about it for a long time – Are you ready to do something about your eating habits?

Eating healthy means paying attention to the basics, including eating a variety of foods.

## Do you remember Amy?



Amy is getting ready to graduate from beauty school. Jordan (her son) is learning his colors. Amy, have you started eating more fruits?

"I've been seeing more about why fruit is good for you. I'd like to start eating more

but I've been too busy to think about it.



## Quick Fix

- ⇒ Fruit is quick and easy! Throw an apple or banana in your bag or pocket to eat later in the day.
- ⇒ Fruit is sweet and tastes good. Put some cans of fruit in the refrigerator. When you get hungry, open a can for a refreshing dessert or a snack.
- ⇒ Just pour a small 6 ounce glass of any 100% fruit juice and you've had 1 fruit serving.
- ⇒ A fruit bowl looks nice and it reminds you to eat fruit.



## An Apple a Day...

**Buying Tips:** Choose firm apples with no soft spots or wrinkles on the skin.

**Preparation:** Wash apples in cold water. Eat them plain, with yogurt, or in your favorite apple recipe.

Check out the recipe on the other side.

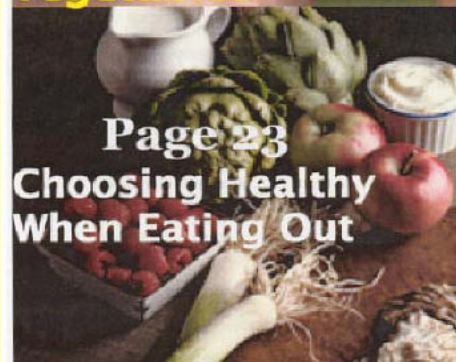


# The F&V Connection

to feeling good and looking hot

**Page 14**  
12 Ways to  
Increase Your  
Fruit and  
Vegetable Intake

**Page 27**  
Nutrition facts  
on your favorite  
fruits and  
vegetables



**Page 12**  
Hangover Helper

**Page 32**  
Meals in Minutes



**Page 21**  
Take a Spring  
Break

## Magazine

Reference  
manual with  
stage-based  
information  
& activities



# Let's practice...

- ◆ Group 1 – Knowing what you know about stages of change, how would you change a standard educational message to reach a WIC mom in precontemplation for eating fruits and/or vegetables (you choose)?
- ◆ Group 2 – Same as above but Preparation
- ◆ Group 3 – Same but maintenance