

# Defining What Works in Tailoring: A Meta-Analysis of Computer- Tailored Interventions for Cancer Prevention and Control Behaviors

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# What Are We Talking About?

Computerized

print-feedback

web-based

Personalized

e-health

Tailored

Computer-tailored

# Tailoring.....

Combination of strategies and information intended to reach **one specific** person based on characteristics that are unique to that person, related to the outcome of interest, and derived from an **individual assessment** Kreuter et al., 2000

# Previous Reviews

## Systematic Reviews

- Skinner 1999
- Strecher 1999
  - 13 smoking studies - 6/8 sig
- Kroeze 2006
- Revere & Dunbar 2001
  - 34/37 sig

## Meta-Analyses

Focus on 1 Behavior and confounded medium

- Sohl 1999
- Strecher 1999
- Brug 1999

Focus on Communication Medium and confounded tailoring

- Nansel 2002
- Norman 2007
- Portnoy 2008
  
- Noar 2007

# What Did I Want to Know

- Effect size (ES) for each behavior
- Effect of intervention methodology
- Intervention maintenance
- Where is theory?

# Methods

- Psychlit, Pubmed, Cochrane Reviews 1988- Aug 2008
- 958 references
- 126 Retrieved
  - Examined ref sections, added 81
- Results reported in 135 studies, 13 unique behaviors
- *Comprehensive Meta-Analysis*
- Employed LO or Hedges g to code ES

# Inclusion Criteria

- Was “tailored” in that it provided individual-based feedback on at least one assessed variable
- Non-tailored comparison group
- Feedback Medium: automated
- Reported sufficient information
- Did not use a counselor or group therapy intervention
- Used CTI’s tailored automatically via computer

# Coding (2-person)

- **Study Name**
- **Subgroup within study**
- **Year**
- **Comparison**
- **Outcome**
- **Timepoint**
- **Country**
- **Significance**
- **Multiple Behavior Study**
- **# of interventions**
- **Stage of Sample**
- **Recruitment Strategy**
- **Recruitment Rate**
- **Retention Rate**
- **Type of Analysis**
- **Random Sampling**
- **Intervention Method**
- **Behavior**
- **Delivery Site**
- **Recruitment Site**
- **Constructs**
- **Theory**
- **Initial N**
- **Age range**
- **Mean Age**
- **Study group**
- **Country Category**
- **Language**
- **Percent Female**
- **Percent Minority**
- **Publication**
- **Publication Category**
- **Quality (15pnt scale)**

# Reasons for Exclusion

Exclusion Criteria	N
Insufficient Reporting	2
<b>Counselor-Based</b>	14
No intervention	5
No Control Group	4
Results reported elsewhere	5
<b>Did not measure change</b>	9
<b>Not computer-tailored</b>	8
Not individual-based	4
<b>Not sufficient # of same behavior</b>	15
Focus on provider training	1
Maintenance as outcome	1

# Results: Overall Mean ES

	<b>k</b>	<b>g</b>	<b>95% CI</b>	<b>p</b>
<b>Mean Effect Size</b>	87	0.18	0.17- 0.20	.001
	Q (86) = 198.92, p = 0.0001 Orwin's Fail Safe N = 86 Trim and Fill, g = .15 Quality, r = .01, p = 0.36			
<b>Behavior</b>				
Smoking Cessation	30	0.17	0.14 - 0.21	.001
Dietary Fat Reduction	25	0.22	0.18 - 0.26	.001
Fruit/Veg	25	0.19	0.16 - .023	.001
Mammography	12	0.13	0.08 – 0.19	.001
Physical Activity	26	0.16	0.11 – 0.21	.001

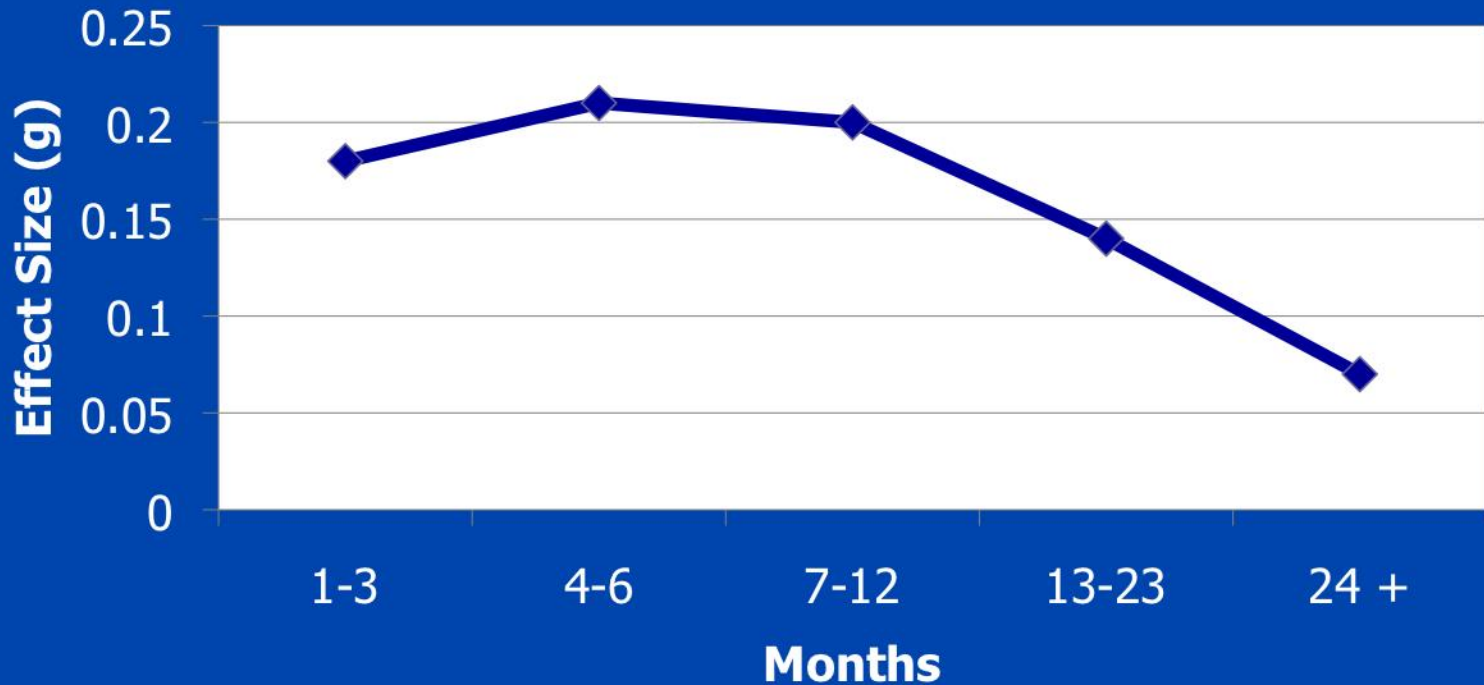
# Results: Tailoring Methods

	<b>k</b>	<b>g</b>	<b>95% CI</b>	<b>p</b>
<b>Tailoring Method</b>				
Dynamic	37	0.21	0.18 – 0.23	.01
Static	50	0.15	0.13 – 0.18	
<b>Number of Contacts (static only)</b>				
1	33	0.12	0.09 – 0.16	.01
1+	17	0.19	0.15 – 0.23	
<b>Intervention Method</b>				
Computer	20	0.16	0.12 – 0.20	.07
Print	60	0.18	0.16 – 0.20	
Automated Phone	3	0.27	0.10 – 0.45	

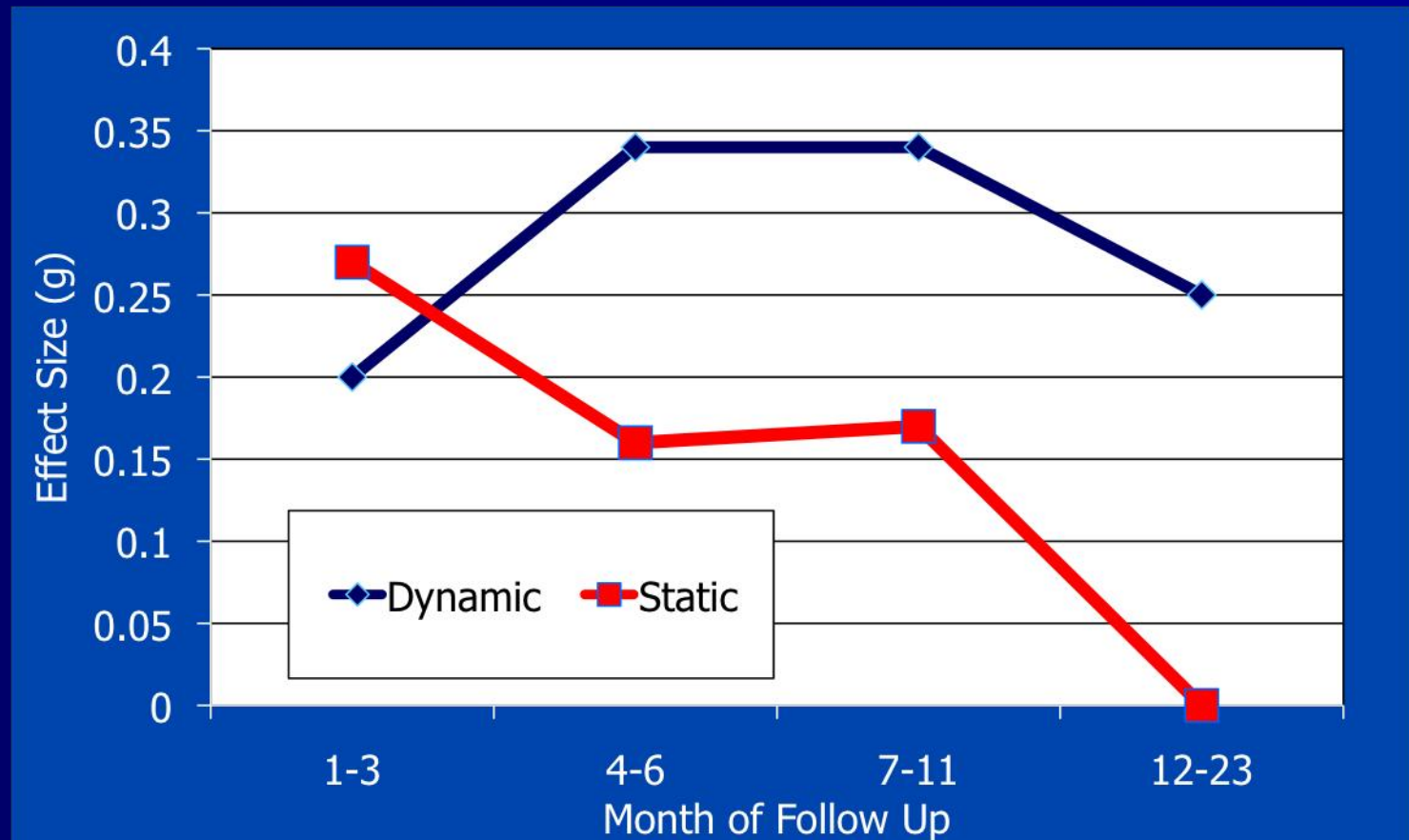
# Results: Methodology

	<b>k</b>	<b>g</b>	<b>95% CI</b>	<b>p</b>
<b>Recruitment Strategy</b>				
Reactive	25	0.18	0.15 – 0.22	.82
Proactive	61	0.18	0.16 – 0.20	
<b>Stage of Sample</b>				
Pre-action	50	0.21	0.18 - 0.24	.01
All levels of motivation	37	0.16	0.13 – 0.18	
<b>Comparison Condition</b>				
Message (minimal care)	48	0.17	0.14 – 0.19	.17
Assessment Only	39	0.19	0.17 – 0.22	
<b>Country</b>				
Outside U.S.	22	0.16	0.13 – 0.20	.32
U.S.	65	0.19	0.16 – 0.21	

# Longitudinal Trends: Mean Effect Size



# Longitudinal Trends: Tailoring Method



# Results:

## Theories and Constructs

	Total	Not Rpted	TTM	HBM	SCT	RP	TTM+ PAPM	TTM+ TPB	TTM+ SCT	TTM+ HBM	TMM+ HBM+ ATT
Stage of Change	57	4	32	1	2	0	1	1	8	5	1
Decisional Balance	32	1	22	1	1	0	1	0	2	2	0
Self-Efficacy	44	6	21	2	5	2	0	1	3	2	0
Processes	24	1	22	0	0	0	0	0	1	0	0
Strategies	14	3	5	0	1	3	0	0	2	0	0
Social Support	10	2	2	0	2	1	0	1	2	0	0
Motives	10	3	3	0	2	1	0	0	1	0	0
Benefits	6	0	0	1	0	1	0	0	1	2	1
Barriers	25	4	7	2	2	1	1	1	3	3	1
Affect	1	0	0	0	0	0	0	0	1	0	0
Attitudes	4	2	2	0	0	0	0	0	0	0	0
Attributions	1	0	0	0	1	0	0	0	0	0	0
Health Beliefs	4	2	0	0	0	0	0	0	0	1	0
Bhvr Fdbk	27	9	5	1	5	0	1	1	4	1	0
Goal Setting	12	2	1	0	2	1	0	0	4	0	0
Knowledge	4	1	0	0	0	0	0	0	2	1	0
Risk	12	2	1	2	1	0	1	0	1	4	0
Culture	5	2	3	0	0	0	0	0	0	0	0
Symptoms	1	1	0	0	0	0	0	0	0	0	0
Addctn Lev	5	2	2	0	0	1	0	0	0	0	0
Neg Views	1	1	0	0	0	0	0	0	0	0	0
<b>Total</b>		<b>13</b>	<b>32</b>	<b>2</b>	<b>7</b>	<b>3</b>	<b>1</b>	<b>1</b>	<b>8</b>	<b>4</b>	<b>1</b>
<b>% of Total</b>		<b>17.3</b>	<b>42.7</b>	<b>2.7</b>	<b>9.3</b>	<b>4.0</b>	<b>1.3</b>	<b>1.3</b>	<b>10.7</b>	<b>6.7</b>	<b>1.3</b>

# Further Questions

- Dissemination and Impact
- Maintenance
- Need for improved description of interventions
  - Defining and measuring constructs
  - Optimal presentation format