



Updated April 11, 2018

P50 MTurk: 76 to 9 messages (2015)

The survey was designed by Noel Brewer, Seth Noar, and colleagues at the UNC Gillings School of Global Public Health. Data collection occurred online with a convenience sample of US adult smokers and nonsmokers. Data collection occurred in April 2015.

Preferred citation:

Noar SM, Kelley DE, Boynton MH, Morgan JC, Hall MG, Mendel JR, Ribisl KM, & Brewer NT. (2018). Identifying principles for effective messages about chemicals in cigarette smoke. *Preventive Medicine*. 2018 Jan;106:31-37. doi: 10.1016/j.ypmed.2017.09.005. Epub 2017 Sep 8. PMID:28890353; PubMed Central PMCID: PMC5764803.

[...] Brackets indicate text that participants did not see, including source of item, instructions to the programmer or response scale options not seen by participants.

Item #	Construct	Item	Response Scale	Source
1	MTurk ID	Please accept the HIT and enter your Amazon Worker ID in the box below.	[Open ended, required response]	P1
2	Age	How old are you?	[Open ended, restricted to only #s 18-115]	P50
		[Programmer notes: 1. See constituent message grid 2. Randomize order of 7 [constituents] 3. Randomize to 1 of 11 messages per [constituent]		
	Prompt	[1 time prompt] The next questions are about messages on cigarette packs. You will look at 7 messages and answer questions about each one. The red arrow points to the message on this cigarette pack. [Repeated prompt with each new message] Please read the message on this cigarette pack closely. Then answer the questions below.		New item
3	Attention/noticing	How much does this message grab your attention?	1 = Not at all 2 = A little bit 3 = Somewhat 4 = Quite a bit 5 = Very much	Adapted from Nonnemaker et al. (2010)
4	Perceived understandability	How easy is this message to understand?	1=Not at all 2=A little 3=Somewhat 4=Very 5=Extremely	Adapted from Cameron, Pepper, and Brewer (2013)
5	Credibility	How believable is this message?	1=Not at all 2=A little 3=Somewhat 4=Very 5=Extremely	Modified P50 (P3)

6	Emotional reactions	How much does this message scare you?	1=Not at all 2=A little 3=Somewhat 4=Very 5=Extremely	Adapted from Nonnemaker, Farrelly, Kamyab, Busey, and Mann (2010)
	Prompt	Say how much you agree or disagree with these statements.		Modified P30
7	Reactance-common knowledge	I already knew about the information in this message.	1=Strong disagree 2=Disagree 3=Neither agree nor disagree 4=Agree 5=Strongly Agree	Hall et al., 2017
8	Reactance-manipulations	This message is trying to manipulate me.	1=Strong disagree 2=Disagree 3=Neither agree nor disagree 4=Agree 5=Strongly Agree	Hall et al., 2017
9	Reactance-anger	This message irritates me.	1=Strong disagree 2=Disagree 3=Neither agree nor disagree 4=Agree 5=Strongly Agree	Hall et al., 2017
10	Negative consequences	This message makes smoking seem less appealing to me.	1=Strong disagree 2=Disagree 3=Neither agree nor disagree 4=Agree 5=Strongly Agree	New item
11	Perceived effectiveness	How much does this message make you concerned about the health effects of smoking?	1 = Not at all 2 = A little bit 3 = Somewhat 4 = Quite a bit 5 = Very much	Adapted from Thrasher et al. (2012)
12	Perceived effectiveness	How much does this message discourage you from wanting to smoke?	1 = Not at all 2 = A little bit 3 = Somewhat 4 = Quite a bit 5 = Very much	Adapted from Hitchman, Driezen, Logel, Hammond, and Fong (2013)
13	Attention check	You should not select an answer to this question, but instead click the "next" button. This will let us know that you read all of the survey instructions. Where do people smoke most often when they smoke cigarettes?	1= Home 2= Workplace 3= School 4= Bar 5= Hospital 6= Car 7= Outdoors	P1 AC2
	Prompt	Next, we would like to ask you a few questions about chance and working with numbers. For each question, please give us your best estimate, even if your estimate is only a guess. Please do not use a calculator or look up answers.		Modified Genomics
14	Numeracy	In general, which of these numbers shows the biggest risk of getting a disease?	1= One in 100 2= One in 1,000 3= One in 10	Modified Lipkus et al., 2001 P50
15	Numeracy	Imagine that we flip a fair coin 1,000 times. What is your best guess about how many times the coin would come up heads in 1,000 flips?	_____ times out of 1,000	Schwartz '97 P30
16	Numeracy	In the BIG BUCKS LOTTERY, the chance of winning a \$10 prize is 1%. What is your best guess about how many people would win a \$10 prize if	_____person(s) out of 1,000	Schwartz '97 P30

		1,000 people each buy a single ticket to BIG BUCKS?		
17	Numeracy	In ACME PUBLISHING SWEEPSTAKES, the chance of winning a car is 1 in 1,000. What percent of tickets to ACME PUBLISHING SWEEPSTAKES win a car?	____%	Schwartz '97 P30
	Prompt	The sentences below are missing words. Look for the _____ and pick a word that makes the most sense.		New item
18	Literacy	Your doctor has sent you to have a _____ X-ray.	[1st blank] a. stomach b. diabetes c. stitches d. germs	S-TOFHLA
19	Literacy	You must have an _____ stomach when you come for _____.	[1st blank] a. asthma b. empty c. incest d. anemia [2nd blank] a. is b. am c. if d. it	S-TOFHLA
20	Literacy	The X-ray will _____ from 1 to 3 _____ to do.	[1st blank] a. take b. view c. talk d. look [2nd blank] a. beds b. brains c. hours d. diets	S-TOFHLA
21	Literacy	THE DAY BEFORE THE X-RAY For supper have only a _____ snack of fruit, _____ and jelly, with coffee or tea.	[1st blank] a. little b. broth c. attack d. nausea [2nd blank] a. toes b. throat c. toast d. thigh	S-TOFHLA
	Prompt	The next questions are about cigarettes.		P50
22	Cigarette use	Have you smoked at least 100 cigarettes in your entire life?	0= No 1= Yes	P50
23	Cigarette frequency	Do you now smoke cigarettes every day, some days, or not at all?	1= Every day 2= Some days 3= Not at all	P50
24	Cigarette frequency	[Only ask if 23=some days] In the past 30 days, on how many days did you smoke cigarettes?	[Open ended, restricted to only #s 0-30 allowed]	P50
25	Cigarette quantity	[Only ask if 23= every day] On average, about how many cigarettes do you now smoke each day? A pack usually has 20 cigarettes in it.	[Open ended, restricted to only #s 1-1500]	P50
26	Quit intentions	Are you planning to quit smoking...	1= Within the next month 2= Within the next 6 months 3= Sometime in the future beyond 6 months 4= Not planning to quit	P50, modified response punctuation
27	OTP use	In the past 30 days, have you used any of the following tobacco products? Please check all that apply.	1= E-cigarettes or other vaping devices (such as e-hookah and vape pens) 2= Traditional cigars 3= Cigarillos, filtered cigars or little cigars 4= Pipe filled with tobacco 5= Hookah 6= Smokeless tobacco (such as snus, moist snuff, dip, spit and chew) 7= None of the above	New item, modified PATHS responses
28	Sex	Are you male or female?	1= Male	P50

			2= Female	
29	Hispanic	Are you of Hispanic, Latino, or Spanish origin?	0 = No 1 = Yes	P50
30	Race	Which one of these groups would you say best represents your race?	1= White 2= Black or African American 3= American Indian or Alaska Native 4= Asian, or 5= Pacific Islander 6= Other	P50
31	Education	What is the highest degree or level of school you have completed?	[Drop down menu] [0= No schooling completed 1= Nursery school to 4 th grade 2= 5 TH or 6 TH grade 3= 7 TH or 8 TH grade 4= 9 TH grade 5= 10 TH grade 6= 11 TH grade 7= 12 TH grade - no diploma 8= High school graduate or GED 9= Some college credit, but less than 1 year 10= 1 or more years of college, no degree 11= Associate's degree, for example: AA or AS 12= Bachelor's degree, for example: BA, AB, or BS 13= Master's degree, for example: MA, MS, MEng, MEd, MSW, or MBA 14= Professional degree, for example: MD, DDS, DVM, LLB, or JD 15= Doctorate degree, for example: PhD or EdD	P50, modified responses
32	Sexual orientation	The next question is about your sexual orientation. Do you consider yourself to be...	1= Straight or heterosexual 2= Gay or lesbian 3= Bisexual	P50
33	Income prompt	The next few questions ask about your household. By household, we mean all people who live with you and share financial resources. Please do not include roommates who share only rent and utilities but do not share other living expenses such as food and clothing.		
34	Income	[See P50 Phone Survey for detailed programming] How many people are in your household, including you?	[Open ended, restricted to only #s 1-20] _____ People	P50
35	Income	Would you say that your total annual household income is ... [1= Below \$25,000 per year [GOTO 36 ONLY IF 34 <5; OTHERWISE GOTO 37] 2= Between \$25,000 and \$49,999 per year [GOTO L36 IF 34 = 5-10; ELSE GOTO 37] 3= Between \$50,000 and \$74, 999 per year [SKIP TO 37] 4= Between \$75,000 and \$100,000 per year [SKIP TO 37]	[Drop down menu] [1= Below \$25,000 per year 2= Between \$25,000 and \$49,999 per year 3= Between \$50,000 and \$74, 999 per year 4= Between \$75,000 and \$100,000 per year 5= Above \$100,000 per year]	P50

		5= Above \$100,000 per year] [SKIP TO 37]		
36	Income/poverty	<p>[INSERT CONDITION 1-10 BASED ON HOUSEHOLD SIZE REPORTED IN ITEM 34]</p> <p>Would you say that your total household income is above or below X [see programming notes on P50 phone survey]</p>	<p>1= Above 2= Below</p> <p>[1= \$11,670/yr or \$972/mo, 2= \$15,730/yr or \$1,310/mo, 3= \$19,790/yr or \$1,649/mo, 4= \$23,850/yr or \$1,979/mo, 5= \$27,910/yr or \$2,325/mo, 6= 31,970/yr or \$2,664/mo, 7= 36,030/yr or \$3,002/mo, 8= 40,090/yr or \$3,340/mo 9= 44,150/yr or \$3,678/mo 10= 48,210/yr or \$4,016/mo]</p>	P50
37	MTurk use	About how many research surveys have you taken on MTurk in the last 12 months?	[Open ended, restricted to #s]	P1
38	MTurk use	About how many of these research surveys were about tobacco, cigarettes, or smoking?	[Open ended, restricted to #s]	P1
39	Attention check	<p>You will be paid for this survey based on your participation so far. Your answer to the following question will not affect your MTurk payment in any way, so please be honest.</p> <p>Please say how seriously you took completing this survey. In other words, how much would you say that you tried to answer the survey questions to the best of your ability?</p>	<p>1= Not at all 2= A little 3= Somewhat 4= A lot</p>	P1 AC4

Constituent Messages

Arsenic messages

		Found In - Arsenic			
		<i>None</i>	<i>Termite Poison</i>	<i>Rat Poison</i>	<i>Termite poison & Rat Poison</i>
Health Effects- Arsenic	<i>None</i>	Cigarette smoke contains arsenic.	Cigarette smoke contains arsenic. This is found in termite poison.	Cigarette smoke contains arsenic. This is found in rat poison.	Cigarette smoke contains arsenic. This is found in termite and rat poison.
	<i>Heart Damage</i>	Cigarette smoke contains arsenic. This causes heart damage.	Cigarette smoke contains arsenic. This is found in termite poison and causes heart damage.	Cigarette smoke contains arsenic. This is found in rat poison and causes heart damage.	
	<i>Bladder cancer</i>	Cigarette smoke contains arsenic. This causes bladder cancer.	Cigarette smoke contains arsenic. This is found in termite poison and causes bladder cancer.	Cigarette smoke contains arsenic. This is found in rat poison and causes bladder cancer.	
	<i>Heart Damage & bladder cancer</i>	Cigarette smoke contains arsenic. This causes heart damage and bladder cancer.			

Lead messages

		Found In - Lead			
		<i>None</i>	<i>Batteries</i>	<i>Motor Oil</i>	<i>Batteries & Motor Oil</i>
Health Effects- Lead	<i>None</i>	Cigarette smoke contains lead.	Cigarette smoke contains lead. This is found in batteries.	Cigarette smoke contains lead. This is found in motor oil.	Cigarette smoke contains lead. This is found in batteries and motor oil.
	<i>Cancer</i>	Cigarette smoke contains lead. This causes cancer.	Cigarette smoke contains lead. This is found in batteries and causes cancer.	Cigarette smoke contains lead. This is found in motor oil and causes cancer.	
	<i>Brain disorders</i>	Cigarette smoke contains lead. This causes brain disorders.	Cigarette smoke contains lead. This is found in batteries and causes brain disorders.	Cigarette smoke contains lead. This is found in motor oil and causes brain disorders.	
	<i>Cancer & Brain disorders</i>	Cigarette smoke contains lead. This causes cancer and brain disorders.			

Uranium messages

		Found In - Uranium			
		<i>None</i>	<i>Nuclear Weapons</i>	<i>Radioactive Material</i>	<i>Nuclear Weapons & Radioactive Material</i>
Health Effects- Uranium	<i>None</i>	Cigarette smoke contains uranium.	Cigarette smoke contains uranium. This is found in nuclear weapons.	Cigarette smoke contains uranium. This is found in radioactive material.	Cigarette smoke contains uranium. This is found in nuclear weapons and radioactive material.
	<i>Lung tumors</i>	Cigarette smoke contains uranium. This causes lung tumors.	Cigarette smoke contains uranium. This is found in nuclear weapons and causes lung tumors.	Cigarette smoke contains uranium. This is found in radioactive material and causes lung tumors.	
	<i>Kidney damage</i>	Cigarette smoke contains uranium. This causes kidney damage.	Cigarette smoke contains uranium. This is found in nuclear weapons and causes kidney damage.	Cigarette smoke contains uranium. This is found in radioactive material and causes kidney damage.	
	<i>Lung tumors & Kidney damage</i>	Cigarette smoke contains uranium. This causes lung tumors and kidney damage.			

Formaldehyde messages

		Found In - Formaldehyde			
		<i>None</i>	<i>Embalming fluid</i>	<i>Car Exhaust</i>	<i>Embalming Fluid & Car exhaust</i>
Health Effects- Formaldehyde	<i>None</i>	Cigarette smoke contains formaldehyde.	Cigarette smoke contains formaldehyde. This is found in embalming fluid.	Cigarette smoke contains formaldehyde. This is found in car exhaust.	Cigarette smoke contains formaldehyde. This is found in embalming fluid and car exhaust.
	<i>Throat cancer</i>	Cigarette smoke contains formaldehyde. This causes throat cancer.	Cigarette smoke contains formaldehyde. This is found in embalming fluid and causes throat cancer.	Cigarette smoke contains formaldehyde. This is found in car exhaust and causes throat cancer.	
	<i>Chronic bronchitis</i>	Cigarette smoke contains formaldehyde. This causes chronic bronchitis.	Cigarette smoke contains formaldehyde. This is found in embalming	Cigarette smoke contains formaldehyde. This is found in car exhaust	

			fluid and causes chronic bronchitis.	and causes chronic bronchitis.	
	Throat cancer & Chronic bronchitis	Cigarette smoke contains formaldehyde. This causes throat cancer and chronic bronchitis.			

Ammonia messages

		Found In - Ammonia			
		<i>None</i>	<i>Pesticides</i>	<i>Floor Cleaner</i>	<i>Pesticides & Floor Cleaner</i>
Health Effects- Ammonia	None	Cigarette smoke contains ammonia.	Cigarette smoke contains ammonia. This is found in pesticides.	Cigarette smoke contains ammonia. This is found in floor cleaner.	Cigarette smoke contains ammonia. This is found in pesticides and floor cleaner.
	Breathing problems*	Cigarette smoke contains ammonia. This causes breathing problems.	Cigarette smoke contains ammonia. This is found in pesticides and causes breathing problems.	Cigarette smoke contains ammonia. This is found in floor cleaner and causes breathing problems.	
	Damage to lung tissue	Cigarette smoke contains ammonia. This causes damage to lung tissue.	Cigarette smoke contains ammonia. This is found in pesticides and causes damage to lung tissue.	Cigarette smoke contains ammonia. This is found in floor cleaner and causes damage to lung tissue.	
	Breathing problems & damage to lung tissue	Cigarette smoke contains ammonia. This causes breathing problems and damage to lung tissue.			

Nitrosamines messages

		Found In - Nitrosamines			
		<i>None</i>	<i>Tobacco</i>	<i>Only tobacco</i>	<i>N/A</i>
Health Effects- Nitrosamines	None	Cigarette smoke contains nitrosamines.	Cigarette smoke contains nitrosamines. These are found in tobacco.	Cigarette smoke contains nitrosamines that are only found in tobacco.	N/A
	Mouth cancer	Cigarette smoke contains nitrosamines.	Cigarette smoke contains nitrosamines. These are	Cigarette smoke contains nitrosamines that are only found in	

		These cause mouth cancer.	found in tobacco and cause mouth cancer.	tobacco. These cause mouth cancer.	
	Lung cancer	Cigarette smoke contains nitrosamines. These cause lung cancer.	Cigarette smoke contains nitrosamines. These are found in tobacco and cause lung cancer.	Cigarette smoke contains nitrosamines that are only found in tobacco. These cause lung cancer.	
	Mouth cancer & Lung cancer	Cigarette smoke contains nitrosamines. These cause mouth and lung cancer.			

Other Constituent Messages

		2 constituents	3 constituents	4 constituents	Other
		Cigarette smoke contains arsenic and nitrosamines.	Cigarette smoke contains arsenic, formaldehyde, and nitrosamines.	Cigarette smoke contains arsenic, formaldehyde, lead, and nitrosamines.	Ammonia is added to cigarettes, which makes them more addictive.
		Cigarette smoke contains uranium and formaldehyde.	Cigarette smoke contains uranium, arsenic, and lead.	Cigarette smoke contains uranium, arsenic, ammonia, and lead.	Cigarette smoke has over 70 chemicals that cause cancer and death.
		Cigarette smoke contains ammonia and lead.	Cigarette smoke contains ammonia, formaldehyde, and uranium.	Cigarette smoke contains ammonia, formaldehyde, nitrosamines, and uranium.	