

# What 2 put in a txt:

Creating text messages for teens to  
promote healthy eating & active living

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# Abstract

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Healthcare professionals are now able to engage hard-to-reach populations by using innovative approaches to promote health. Short message service (SMS), or text messaging, is one example. It provides a quick, inexpensive method to disseminate health information and interact with a variety of audiences. Teens in particular respond well to this form of communication, and studies confirm they prefer this media. Of the three-quarters of teens who own a cell phone, 88% report texting daily.<sup>1</sup> Public health practitioners and healthcare professionals should consider using text messaging as way to encourage teens to make healthy lifestyle choices.

This report presents qualitative research conducted by a University of Washington Community-Oriented Public Health Practice graduate student who collaborated with the Communications Team at Public Health – Seattle & King County. The team analyzed teen receptiveness to text messages about healthy eating and active living by creating, testing, and revising text messages. Teens were interviewed at six Seattle School-Based Health Centers. The findings of this report will help guide public health practitioners with creating effective health text messages that are tailored to teens.

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# 1. Introduction

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## *Review of the project*

Technology has embedded itself as an integral part of society and public health practitioners must explore how to use these media to promote health. The Communications Team at Public Health – Seattle & King County (PHSKC) recognizes the importance of technology to reach all populations they serve, especially teens. They have performed extensive research on the ways individuals access health information using mobile health (mHealth) mechanisms. The Communications Team has most recently focused on the possibility of texting message utilization in the Seattle School-Based Health Centers.

This work began when a University of Washington Community-Oriented Public Health Practice (COPHP) graduate student conducted a feasibility assessment in 2012. Her work explored the practicability of implementing a text-messaging program to promote healthy behavior choices in teens. Teens utilizing the Seattle School-Based Health Centers (SBHCs) were the intended audience.

The researcher discovered that teens were particularly interested in such a program. The health topics teens identified as of interest aligned with 7-5-2-1-0. The 7-5-2-1-0 health message stands for, eat breakfast 7 days a week, consume 5 servings of fruits and vegetables a day, limit screen time to less than 2 hours, engage in 1 hour of physical activity a day, and consume 0 sugar-sweetened beverages. Additional health topics they cited were stress and sleep.

This report presents the current COPHP practicum project. It involved crafting text messages on 7-5-2-1-0, stress, sleep, tobacco, and alcohol. These text messages were then tested with teens in the SBHCs. The text messages were revised based on feedback provided by teens. Text messages were finalized after a secondary round of evaluation by teens. Nearly eighty messages were created at the conclusion of this work. A checklist for creation of future text messages targeted at teens was also developed. PHSKC anticipates using these text messages in a pilot text-messaging program at the SBHCs.

### *Goals and objectives*

- Research methods for effectively communicating health information via Short Message Service (SMS).
- Research relevant youth health topic areas, specifically sleep, nutrition (i.e. breakfast, fruits and vegetables), screen time, physical activity, stress, tobacco and alcohol use, and sugar sweetened beverages.
- Create 3 or more text messages for each of the 7-5-2-1-0 topic areas and stress, sleep, alcohol, and tobacco.
- Evaluate receptiveness of text messages with teens utilizing SBHCs.

## 2. Literature review

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### *Text messaging*

There are over 200 million cell phone users in the United States.<sup>2</sup> Researchers suggest using mobile phones as a platform for promoting health given the general acceptability of this tool.<sup>2</sup> Short-message service (SMS), or text messaging, is one capability of mobile phones that has been examined. Use of text messaging has steadily increased in the past decade and many demographic groups prefer this method of communication.<sup>2</sup>

Seventy-three percent of American adults use text messaging and on average send and receive 41.5 text messages per day.<sup>3</sup> Young adults and adolescents send and receive the most text messages of all age groups; text message usage generally decreases with age.<sup>3</sup> Individuals of low-socioeconomic status are also cited as high utilizers of text messaging.<sup>2,3</sup> The uptake of text messaging now allows public health practitioners and healthcare providers with an advanced method for communicating with their intended audience.

Text messaging is a simple and prompt way to deliver personalized health information to any number of individuals. It is a cost-effective approach that requires minimal resources for the sender and can accommodate virtually any setting.<sup>2</sup> Text messages must fall within a 160-character limit.<sup>4</sup> This parameter demands the sender to exercise careful thought and creativity for effectively communicating health messages.<sup>4</sup> There are two types of text messages: push and pull messages. Push messages send messages at a pre-determined, regular frequency whereas pull messages allow the individual to request information.<sup>5</sup> This is also referred to as one-way and two-way communication.<sup>6</sup>

### *Text messaging behavior in teens*

Cell phone ownership and usage amongst teens has increased significantly in the past decade. Fifty-eight percent of 12 year olds owned a cell phone in 2012 compared to 18% in 2004.<sup>5</sup> Cell phone ownership of 12 to 17 year olds increased 30% from 2004 to 2010.<sup>1</sup> Of the three-quarters of these teen who owned a cell phone, 88% sent or received text messages.<sup>1</sup> One-third average sending and receiving nearly 3000 text messages a month, or the equivalent of over one-hundred a day.<sup>1</sup> The prominence of texting in this population reflects the paradigm shift from the use of traditional forms of communication (i.e. landline phone calls, in-person conversations) to digital mediums (i.e. text messaging, email).

### *Using text messaging to promote teen health*

Healthcare professionals and public health practitioners have been exploring ways to integrate text messaging into the healthcare setting. Text messaging programs excel at “bridg[ing] gaps in health disparities and reach[ing] across demographics.”<sup>2</sup> Researchers further argue that text messaging can augment health information teens are exposed to in the classroom, home, and Internet.<sup>2</sup> This can be an additional tool for healthcare providers to use in the clinical setting.<sup>2</sup> Careful considerations must be employed when implementing text-messaging programs. They should take into account the audience, frequency, and tone of the text message.

A study of 12 to 18 year old teens explored the receptiveness of text messages on nutrition and physical activity.<sup>4</sup> The researchers found several themes related to the style and content of the messages. Words like “always” or “never” were regarded as authoritative and met with resistance from teens. They instead preferred text messages that included practical, personal, and factual information from health experts.<sup>4</sup>

A number of text messaging programs have been implemented to address sexual and reproductive health. Others programs focus on nutrition and physical activity. “Text4Baby,” “Smoke-free TXT,” “SexInfo,” and “BrdsNBz Text Message Warm Line” are examples of these programs. Very few evaluations have been conducted on the long-term outcomes for text-messaging programs.

### *5-2-1-0: a model to promote healthy behavior choices in teens*

Childhood obesity has reached epidemic levels in the United States and various efforts have been tried to address this problem. One approach is 5-2-1-0. 5-2-1-0 is an evidenced-based practice strategy developed by a groups of experts at the American Medical Association, Centers for Disease Control and Prevention, and Department of Health and Human Services.<sup>7</sup> This approach has been widespread in the United States and incorporated into 40% of social marketing campaigns for pediatric obesity prevention.<sup>7</sup>

5-2-1-0 stands for four simple health messages: eat 5 servings of fruits and vegetables a day, limit recreational screen time to less than 2 hours, participate in 1 hour of physical activity every day, and consume 0 sugar-sweetened beverages each day.<sup>8</sup> A statewide initiative called “Let’s Go! 5210” in Maine successfully integrated this messaging into pediatric primary care settings.<sup>9</sup> 5-2-1-0 messages are perceived by parents as realistic and achievable, particularly limiting sugar-sweetened beverages.<sup>7</sup>

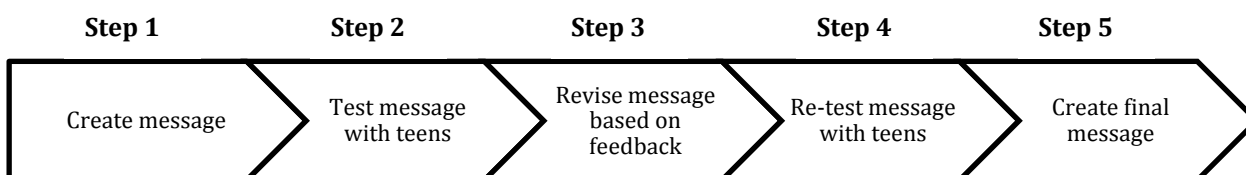
Seattle Children’s Hospital expanded 5-2-1-0 by including ‘7’ for eating breakfast 7 days a week.<sup>10</sup> The Seattle School-Based Health Centers (SBHCs) also adopted 7-5-2-1-0 as a



method for health promotion. The SBHCs serve the health care needs of students in ten high schools and four middle schools. Open during school hours, these sponsored facilities offer nursing care, chronic disease management, mental health and prevention programs, and immunizations.<sup>11</sup>

### 3. Methodology

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#### *Step 1 – Creating the message*

The content of text messages was based on 7-5-2-1-0, aiming for 9 hours of sleep per night, reducing stress, and using no alcohol and tobacco. The information incorporated into the text messages came from the Centers for Disease Control and Prevention (CDC), National Institutes of Health, and other scholarly sources. The health belief model served as the foundational theory for creating the text messages.

The health belief model examines various aspects of an individual to assess why, or why not, they will partake in a particular health behavior. Several constructs serve as the foundation of this model and include, perceived susceptibility, severity, benefits, and barriers; cues to action; and self-efficacy.<sup>12</sup> This model thus assists with understanding the reasons a teen may or may not be receptive to a text message. This can then guide the creation of effective messages.

To formulate the text messages the researcher developed a matrix to represent a myriad of styles and prompts that might appeal to teens. The matrix focused on prior research that identified themes for creating text messages crafted specifically for teens.<sup>4</sup> The researcher also identified several message appeals (i.e. humor, positive, fear, emotional, etc.) to incorporate into the style and content of the text messages. This led to the final selection of three styles (humor, direct, and question) and prompts (action, motivation, and informational). Table 1 below provides an example of the matrix used to develop the various types of messages.

**Table 1: Example of text message matrix**

**Health topic area: Breakfast**

|        | Style  |   |  |
|--------|--|---|--|
|        | Humor  | Direct  | Question   |
|        | Action   | <i>Remember to eat breakfast.</i>   | <i>Are you having trouble fitting breakfast into your schedule? Plan ahead. Set out dishes and dry ingredients, prep foods, or make a to-go meal the night before.</i> |
|        | Motivation   | <i>Add berries to your favorite whole-grain and low-sugar cereal this AM.</i>                               | <i>Need help choosing healthy breakfast options? Look for whole grain cereals and oatmeal. Add fresh or frozen fruits for extra nutrition.</i>                         |
| Prompt | Informational  | <i>Breakfast can help increase your memory, energy, and attention.</i>                                      | <i>What's the big deal with breakfast? Experts say breakfast can increase memory, energy, and attention.</i>   |
|        | <i>Ingrain breakfast into your morning routine! Try whole grain, low-sugar cereals or oatmeal. Add fresh berries or other fruit for extra nutrition!</i> | <i>Think about it, did you eat breakfast today? Did you know eating breakfast can increase your memory?</i> |  |

First, each message fell under three prompts which direct an action, overtly motivate, and educate with facts. Action messages offered a concrete suggestion related to the topic area (i.e. adding fresh berries to breakfast cereal). Motivational messages offered encouragement and support for the reader to achieve the health message (i.e. it might be difficult, but try for 9 hours of sleep tonight). Lastly, informational messages provided a statistic or fact related to the topic area (i.e. number of smokers who began before age 18).

Then, messages additionally consisted of three specific styles: humor, direct, and question. Humorous messages were lighthearted and often included play on words (i.e. tell cigarettes to butt out of your life!). Direct messages were short with vague suggestions for implementing the health behavior (i.e. don't drink soda today). Messages with a question included a prompting question with the answer or response within the text (i.e. Did you know a study found that only 15% of teens get the recommended 8 ½ hours of sleep? Try making sleep a priority tonight!). See appendix A for a complete list of final text messages.

### *Step 2 - Testing the message*

Collection of qualitative data took place during both one-on-one and group sessions at the SBHCs. After a brief explanation of the project, the researcher encouraged participants to put themselves in the role of someone who signed up to receive text messages on various health topics. Index cards, each with a random selection of text messages on it, facilitated feedback sessions by allowing participants to read and judge the message. The condition of the instruction prompted participants to separate index cards into “like” and “don’t like” piles.

Once the participant assigned messages to the distinctive piles, the researcher posed several questions. These included, “What about these messages did you like?,” “Did you understand the point of the message?,” “Would this help you in making healthier choices?,” “Why didn’t you like these messages?,” “If you could change the message, how would you?,” and “What sort of information would you like to see in a text message about health?” At the conclusion of the session, participants were allowed to make any additional comments. These sessions were recorded, with the participant’s permission, for transcription purposes.

### *Step 3 - Revising the messages*

Once transcription of data took place, the researcher then created a table to extrapolate common themes to guide message revision and connected specific comments to messages. The themes fell under four overarching categories: style, content, motivation, and realism. They were further broken down into subthemes and revision of the original messages finally occurred at the conclusion of this step. Revisions stemmed from the specific message feedback. Appendix B presents the complete table of message revision with feedback.

### *Step 4 - Retesting the message*

Messages requiring revision underwent additional testing with teens in the SBHCs. The researcher utilized the same methods as in step 2 (testing the message). The intent of retesting the message was to validate the effectiveness of taking what teens identified initially and translating this into the message.

### *Step 5 - Creating the final message*

Lastly, additional suggestions voiced by the teens in step 4 were incorporated into the revised message. All messages, regardless of whether teens provided feedback on them, were evaluated and revised into a final set of text messages. The final messages can be found in appendix A.

### 3. Results

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#### *Participants*

In total, six Seattle Public School SBHCs participated. These included Ballard High School, Franklin High School, Garfield High School, Nathan Hale High School, NOVA Alternative High School, and Seattle World School. Thirty-two students provided feedback on the messages.

#### *Feedback*

Overall, the researcher crafted a total of seventy-nine text messages. Table 2 displays the total number of messages created for each topic area and prompt.

**Table 2: Total number of messages by topic area and prompt**

| Topic Area  | Total messages | Prompt |            |               |
|---|----------------|--------|------------|---------------|
|   |                | Action | Motivation | Informational |
| Get 9 hours of sleep each night                       | 10             | 2      | 3          | 5             |
| Eat breakfast 7 days a week                           | 13             | 7      | 3          | 3             |
| Eat 5 or more servings of fruits and vegetables a day | 11             | 2      | 4          | 5             |
| Less than 2 hours of recreational screen time per day | 5              | 3      | 1          | 1             |
| Engage in 1 hour or more of physical activity per day | 11             | 5      | 2          | 4             |
| Consume 0 sugar-sweetened beverages                   | 8              | 4      | 2          | 2             |
| Limit stress  | 9              | 2      | 5          | 2             |
| Drink 0 alcoholic beverages                           | 2              | 1      | 0          | 1             |
| Use 0 tobacco products                                | 10             | 0      | 2          | 8             |

Students talked about the messages and their suggestions for improvement according to four central themes: style, content, motivation, and realistic recommendations. Within each central theme, several subthemes resulted.

### Style

Message style, or tone, heavily influenced teen's reactions to the message. Style essentially referred to the voice of the message. The subthemes identified included humor, advice, relatable, non-authoritative, reminder, and clarity.

#### Style: Humor

Most teens preferred messages that used humor as a message appeal. They referred to these as "corny", "clever", "funny", and "creative" and a fun way to present the information. When observing the teens as they read these types of messages, reactions often included a laugh or smile. The example below shows a message using humor that required no revision based on the reinforcing comments teens provided.

**Original message:**

Get down to your roots! Veggies like carrots, parsnips, and potatoes are un-beet-able when roasted or baked. You can even make fries or chips in the oven!



**Reinforcing comment(s):**

"Kids and young teenagers like funny, corny stuff."  
"Word-play is good."

On the contrary, not all teens identified humor as an effective delivery method. Some teens found the word play "too much," with one teen expressing that it "just doesn't sit right with me." A few teens expressed that signing up for a text messaging program to promote healthy choices would be a serious commitment. Therefore, messages using humor did not convey the serious tone they anticipated. The revision of the message below shows how the use of "Don't be a soft-y for soft drinks." did not resonate with respondents.

**Original message:**

Don't be a soft-y for soft drinks. Soft drinks, like soda, sports drinks, and juices, can be loaded with sugar and calories.

**Influencing comment(s):**

Trying to make fun and light, but I wouldn't want that. Want something more serious, though this could be my personality, since this would be a serious commitment.

**Modification:**

More serious, less authoritative.

**Final message:**

Only sports drinks for the game, right? Not so fast! Research says drinking plain water and a balanced diet can keep you hydrated and replace electrolytes!

### Style: Advice

Messages that offered advice in a non-authoritative way elicited positive responses from teens. Many teens identified the suggestions as tips they already engage in and felt other teens would benefit from them as well. Suggestions of particular interest focused on simple nutrition tips, like adding fresh fruit to breakfast cereals or natural citrus flavoring to water. As one teen stated, "I'm pretty sure if teens followed these pieces of advice that their lives would be a lot easier. I like how specific they are, the detail, and the backup information." The message below offers an example of a tip related to physical activity that teens appreciated.

**Original message:**

Milk isn't the only way to build strong bones! Getting moo-ving can help, too! Try bone strengthening exercises like jumping, running, basketball, or tennis.

**Reinforcing comment(s):**

This message looks at the bigger picture rather than just milk to build strong bones.

Also, the wording of the advice in a non-direct way was affirmed by teens as an effective style approach. One teen stated, “I like having the question at the beginning, then the answer to the question right after. It’s more helpful than just saying it directly.” Another teen similarly responded saying, “The questions are good. You have to ask yourself and saying it out loud helps reinforce it.”

#### Style: Relatable

Teens found messages that they could form a personal connection with to be particularly powerful. One teen expressed that personal stories had a significant impact on their life. They further suggested that having teens, who have actually done the recommendation, write the messages would be “really powerful.” From a different lens, another teen found a similar connection to the message, “Did you know TV ads can make our food choices worse? Remember that just because its advertised, doesn’t mean it’s good for you!” stating, “I really connect to this one. TV ads, everything is beautiful. Cook it for a minute and it looks like it came out of a gourmet kitchen.” Lastly, teens emphasized a particular relationship with messages on stress and divulged that they experience a great deal of stress in their lives.

#### **Example of message:**

We can’t stress it enough! Managing stress is good for the mind and body. Think of what helps you relax and make time each day for them!

#### Style: Non-authoritative

In nearly all interviews, teens reacted very strongly to messages with an authoritative tone. These messages were often referred to as “motherly” and “nagging.” Messages that began with “don’t” were regarded as “someone just telling you what to do.” Instead, teens preferred messages that fortify autonomy of their health choices.



**Original message:**

Don't let soda sweet-talk you. Look for the unsweetened varieties of sodas and even iced tea and fruit juice.

**Influencing comment(s):**

"If you're receiving a text message, you don't want a message from someone who's not your mother trying to sound like your mother."

"My age group in particular really doesn't respond to that kind of message. They like to be inspired. If they're inspired they'll do a lot more"

**Modification:**

More serious, less authoritative.

**Final message:**

Did you know orange juice has 10 teaspoons of sugar? Try a splash of OJ with seltzer water instead – it only has 1 teaspoon of sugar!

Lastly, one student commented that messages with "you should" sounded forceful and too much like advertising. They suggested using phrases like "consider this."

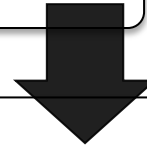
**Style: Reminder**

Teens felt the messages offered a friendly reminder to make healthy choices, especially those deemed easily implementable and of interest. As stated earlier, teens related to messages on stress and considered these helpful particularly at this point of their life. As one teen alluded to, "It's a nice reminder. In high school, there's periods of time when it's really stressful. That'd be a kind of helpful reminder of something you can do, like talking to friends. Also, what stress can lead to, that was good."

On a similar note, topics that broached the subject of peer pressure led to an interesting dialogue about the importance of an issue often considered "over-emphasized." One teen said, "It's a reminder in the moment. Smoking, it's tempting. It might go through to them and get to their senses. In the moment it's sometimes hard to say no."

**Original message:**

Are friends pressuring you to smoke? It's okay to say no. Be firm and don't budge to peer pressure!

**Reinforcing comment(s):**

"You hear don't budge to peer pressure so much, like don't give into your friends that are doing bad things. But in the end, it's such a huge percentage that actually does give into their friends. I don't really know if there's a way to stop that, it's just natural I guess."

**Style: Clarity**

The way some messages appeared on the index card created some confusion for teens, an issue that can arise on a mobile phone, too. This issue of words splitting onto the next line, as demonstrated in the example below, created a misunderstanding of the word play on "a-peeling."

Orange you going to  
try a new fruit today?  
Look for some a-  
peeling ones like  
bananas, grapefruit,  
or mangoes!

Other teens simply found the word play in some messages as difficult to understand.

**Original message:**

You can chew-se not to use tobacco! Even smokeless tobacco can lead to oral cancer and addiction.

**Influencing comment(s):**

"Only thing that got me. Choose, not chew-se. The puns are a bit much."

**Modification:**

Change chew-se to choose.

**Final message:**

You can choose not to use tobacco! Even smokeless tobacco can lead to oral cancer and addiction!

Although concise and clear, short messages did not gain acclamation from teens. Rather these were regarded as "a bit too straightforward" and "sounds kind of boring."

**Original message:**

What level of intensity is your work out? Aim for moderate to vigorous. You'll breathe harder and feel your heart beat faster than normal.

**Influencing comment(s):**

"My teacher would tell us if you can sing a song while you're running, you're not running hard enough. I feel like, if it was, kind of talked down so that where we can relate to it or sounds like more fun, we might get into it more"

**Modification:**

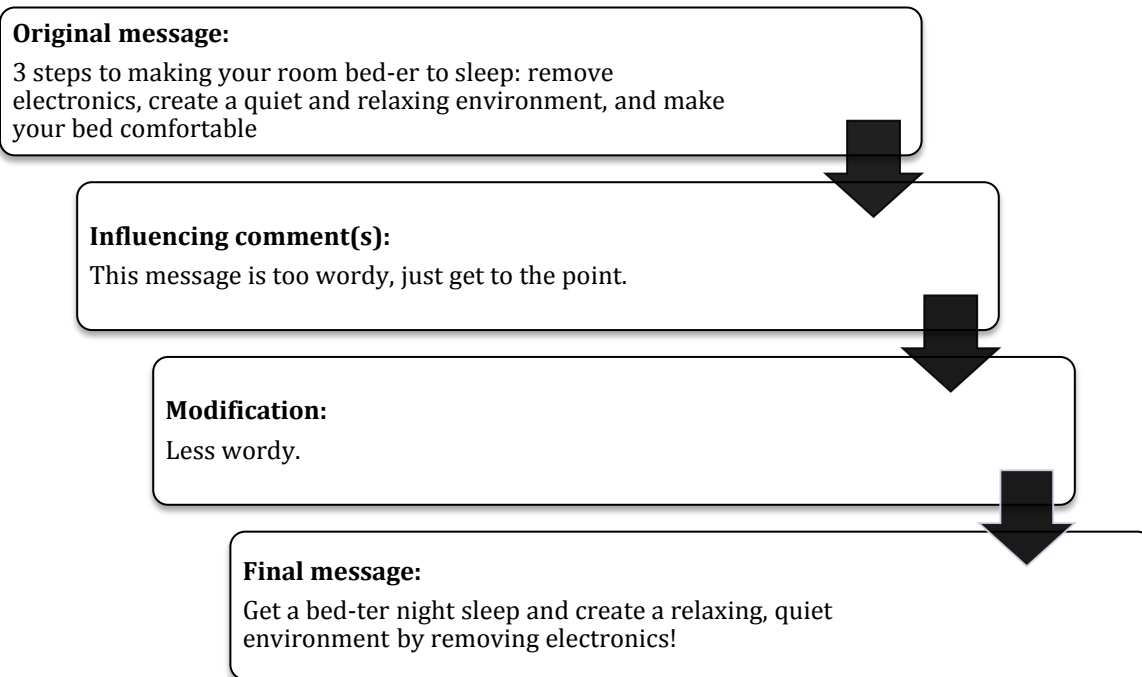
Make more relevant to teen.

**Final message:**

How to know your level of intensity with physical activity: You can't sing if you're doing moderate activity and can only say a few words if its vigorous!

Wordy messages, on the other hand, also did not work well with teens. One pointed out they looked at the first sentence to see if it drew them in to decide whether they liked or

didn't like the message. Overall, though, teens termed the messages as "clear," "easy to understand," "straightforward", and "to the point."



## Content

Although content was predetermined based on the previous feasibility assessment, teens emphasized preference for specific topic areas and the information presented in the message. Subthemes apparent in this area included quality of information, facts, and specificity.

### Content: Quality of information

When assessing the quality of information presented, teens generally found the content to be satisfactory. Again, teens particularly related to messages on stress. In response to a message on stress, one teen stated, "That's pretty true on all levels. I don't express myself all the time. Messages on stress are really important. It'll just put you in a bad mood and it feels permanent. Talking to anyone, friends, family, stranger -- it helps." Other information regarded as "quality" or "important" included nutrition, specifically breakfast and recipes for fruits and vegetables.

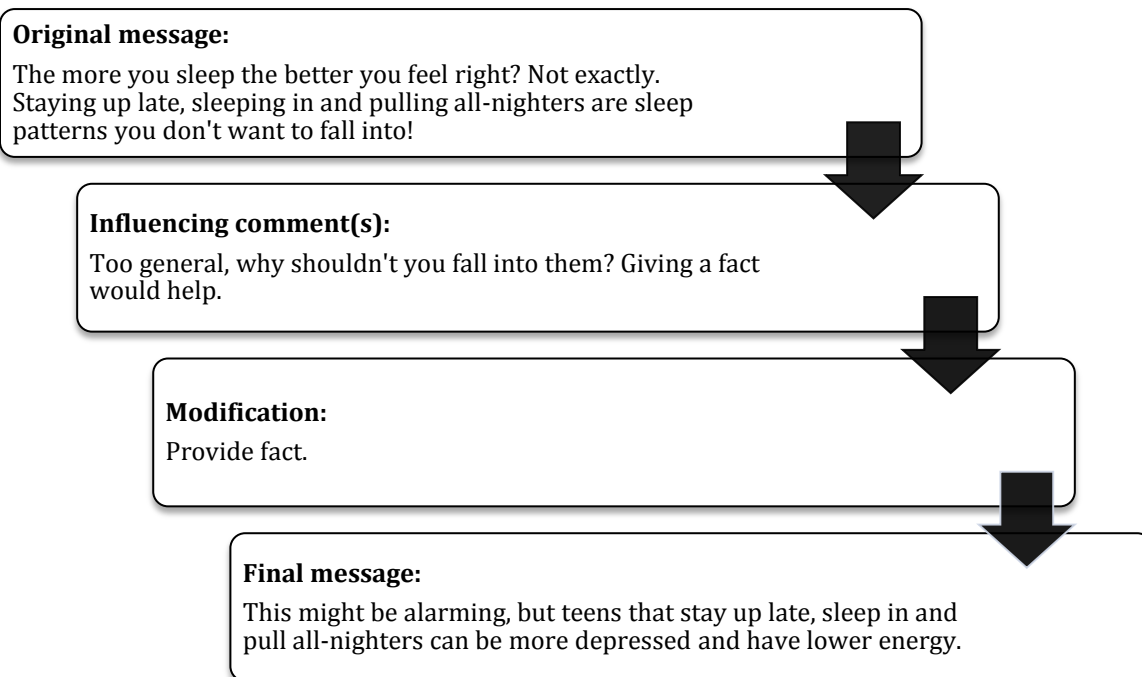
### Content: Facts

Messages that provided an educational tidbit of information or a fact elicited a positive response from teens. It was noted that these were especially effective if they provided the

“consequences if you didn’t do something.” Many teens found the message, “Let cigarettes know you want them to butt out of your life! Over 80% of adult smokers started before age 18. Don’t start!” to be very surprising and “intense.”

#### Content: Specificity

The majority of teens found “too general” messages as not helpful despite being easy to understand. These messages often were a direct tone and short in length. Furthermore, several teens stated these messages included “stuff you should already know.” This was especially true for messages promoting the consumption of milk. One teen said, “Milk information has been stressed so much to us since we were little... we know milk is good. We’ve heard it a lot.” Teens suggested adding a statistic or recipe to the message to make them more appealing. By being more specific, one teen said, “Then people know what to do instead of just saying something is bad.”



Another commonality among feedback related to serving sizes of fruits and vegetables. Many teens admitted they did not know proper serving sizes and suggested including specific and easy examples of how to measure servings.

**Original message:**

Eat 5 servings of fruits and vegetables today.

**Influencing comment(s):**

"Often times told only get so much of this or that, but don't know how big a serving is."

**Modification:**

More details realated to serving size.

**Final message:**

Get a hand on serving sizes! A cupped hand will fit one serving of fruit and counts towards the daily recommended 5 servings of fruits and veggies!

Content: Other topic areas of interest

Teen expressed a particular interest in having more messages related to nutrition, specifically easy recipes; places to be active in Seattle; and online resources for more information. One teen suggested establishing a new topic area that would address teen driving habits.

**Suggestion:**

Messages about places in Seattle to go eat or exercise or hang out, like parks.

**Message:**

Did you know Seattle has 430 parks and open areas? Magnuson, Discovery, and Seward Parks are great places to go for a run or play Frisbee with friends!

### *Motivation*

When prompted to describe whether a message would motivate the teen to comply with the recommended health behavior, the majority said it would. As previously cited, one teen

stated, “I’m pretty sure if teens followed these pieces of advice that their lives would be a lot easier. I like how specific they are, the detail, and the backup information.” Another similarly expressed, “If people were to sign up for it seriously to get text messages like these every day or however it’s supposed to go about, I think that they should, or would, actually pay attention to it”

Others felt signing up for the program indicated being motivated for change and therefore message would simply serve as a reminder or tip for how to achieve their health goal. Teens cited some messages to be more motivating than others, primarily those with more specific suggestions. Lastly, punctuation, specifically exclamation points, was said to “make [messages] more enthusiastic and gives it good exciting energy.”

### *Realistic recommendations*

Teens generally judged recommendations based on whether they were realistic and when messages were received. These sub-themes, realistic and timing, consistently surfaced throughout feedback sessions.

Realistic recommendations: Is it realistic?

Message that offered a good reminder or suggestion, but took too much time or effort, was thought of as not entirely realistic and therefore undoable. One teen stated, “It’s a good idea, but I don’t think anyone would want to go through that effort.” Teens felt messages that required preparation beforehand, such as setting out dishes for a quick start to the morning, could not actually accommodate their busy lifestyle.

#### **Original message:**

So how're you tracking your sleep? Keep a sleep diary of when you go to bed, sleep, wake up, nap, exercise, and drink caffeine to see what affects your sleep!

#### **Influencing comment(s):**

"It's a good idea but I don't think anyone would want to go through that effort."

#### **Modification:**

Did not keep this message.

### Realistic recommendations: Timing

A number of teens commented that to gain optimal effectiveness of messages, the program must consider the time of day when the message is most relevant. For example, messages related to breakfast should be sent in the morning while others, such as smoking or physical activity should be sent afterschool. As one teen stated, “Basically this is all about timing.”

### *Additional considerations*

When asked whether teens preferred to know the sender of the message within the text message, variable responses emerged. The teens who did not desire the sender to be incorporated into the message stated they “wouldn’t need to know because I’d be expecting it.” This often depended on another consideration: how the number would appear on the caller id (i.e. 5 versus 10 digits). Furthermore, some teens expressed that if they signed up for the program at their SBHC or PHSKC, they would consider these organizations as the senders. Teens also suggested having a website for the program where they could go for additional information.



## 4. Discussion

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Considering the popularity of texting with teens, using SMS technology as a means for disseminating health information may prove effective with this age group. However, careful attention must be paid to the phrasing of messages so as to not to alienate the audience. After gaining feedback on messages from teens, it is evident that style, content, motivation, and realism have the greatest impact on receptiveness of the message.

Therefore, the style of the message should be created using humor in a cautious way, a non-authoritative voice, personal connections with teens, and clear and concise language while offering realistic and timely advice. The content of the messages should provide specific facts and statistics from reputable sources in topic areas relevant and of interest to the teens. Lastly, the sender of the text message does not necessarily require inclusion depending on how the number appears on the recipient's mobile phone (i.e. 5 versus 10 digits), disclosure of the sender at opt-in, and the existence of an accompanying website.

Further research should explore the logistics of the text messaging systems to address concerns of how the messages will be sent and received. Program planners should also consider ways to inform teens about when to expect messages (i.e. start date and frequency) and where to go for additional information. Table 3 below provides a summary of the recommendations for creating text messages for teens.

**Table 3: Tips for creating future text messages based on teen feedback**

| Theme | Subtheme          | Message tips   |
|-------|-------------------|--|
| Style | Humor             | Create messages that are considered clever, corny, funny, or lighthearted.   |
|       | Advice            | Provide helpful advice in a non-authoritative voice that is realistic and timely.  |
|       | Relatable         | Look at methods for making the message more personal and relevant to teens.  |
|       | Non-authoritative | Avoid using words and phrases, such as "don't" or "you should," or language that comes across as nagging or telling the teen what to do. |

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|                                  |                                |   |
|----------------------------------|--------------------------------|---|
|                                  | Reminder                       | Develop messages that serve as a friendly reminder for the action desired.  |
|                                  | Clarity                        | Ensure messages are easy to understand and straight forward. Avoid being too wordy.                                       |
| <b>Content</b>                   | Quality of information         | Be sure to present factual information relevant to teens.   |
|                                  | Facts                          | Include statistics and facts about the topic area being presented.  |
|                                  | Specificity                    | Avoid information considered common knowledge. Be specific and avoid general information.                                 |
|                                  | Other topics areas of interest | Expand on topic areas teens identify as important to them, such as stress and teen driving.                               |
| <b>Motivation</b>                |                                | Frame messages to be supportive of an action. Consider if the message is relevant and how that can affect motivation.     |
| <b>Realistic recommendations</b> | Is it realistic?               | Offer advice in messages that is easy to implement and does not take a lot of time.                                       |
|                                  | Timing                         | Ensure messages are sent the appropriate time of day relevant to optimize effectiveness.                                  |
| <b>Additional considerations</b> | Source                         | Inform teens at opt-in what number text messages will be coming from and provide a website to get additional information. |

## 6. Conclusion

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Given the feedback provided by teens at several of the Seattle Public Schools SBHCs, the PHSKC Communications Team can create age-appropriate text messages related to teen health. These results also complement prior research.<sup>4</sup> The style of and content in a text message play the most significant roles in how responsive a teen will be to a health message and whether this will motivate them to engage in a health behavior. Future research can explore whether these text messages influence sustainable behavior change in teens by implementing a text-messaging program.

## 7. General Recommendations

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- Public Health – Seattle & King County should implement a text-messaging program for teens through the School-Based Health Centers in Seattle Public Schools.
- Careful attention should be paid to the development of text messages and motivate teens to engage in a health behavior. Messages with health tips should be realistic and easy to implement.
- The style of the text message should be clear and concise. It should incorporate humor, helpful advice, and a connection with teens while using a friendly, non-authoritative tone.
- The premise of the text message should be based on topics identified by teens as important and relevant. These include, stress, nutrition, physical activity, sleep, and substance use (i.e. tobacco and alcohol).
- Text messages should present information using statistics, facts, or educational tidbits. The content of the message should be specific and avoid common knowledge. Gather information from reputable sources, such as the Centers for Disease Control and Prevention (CDC) or National Institute of Health (NIH).
- Text messages should be sent at an appropriate time which correlates with when the health behavior should be executed (i.e. send messages related to eating breakfast in the morning).
- When teens sign up for a text messaging program, inform recipients of text messages what digits will display when they receive a message. Develop an accompanying website participants can go to for more information, opt-out of the program, or obtain technical assistance.

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# Appendix A

| Content Area | Final Message  |
|--------------|--|
| Sleep        | Did you know a study found that only 15% of teens get the recommended 8 ½ hours of sleep? Try making sleep a priority tonight!                                   |
|              | Get a bed-ter night sleep and create a relaxing, quiet environment by removing electronics! *  |
|              | It might be hard, but make it a goal to get to bed on time tonight. Remember to aim for 9 hours of sleep every night! *  |
|              | You don't always lose when you snooze! High school students who get enough sleep perform better in school and sports!  |
|              | What's your bedtime routine? Consider setting a bed time, turning off electronics, and do what helps your relax, like reading or taking a bath!                  |
|              | Guess how much time you've spent sleeping by age 15? 5 years! Investing time in sleep is good for a healthy body and active mind!                                |
|              | Did you know drowsy driving is like driving drunk and causes over 100,000 crashes each year? Be sure you make sleep a priority!                                  |
|              | This might be alarming, but teens that stay up late, sleep in and pull all-nighters can be more depressed and have lower energy. *                               |
|              | Feeling tired? Can't concentrate in school? Energy drinks and caffeinated beverages aren't the answer! The best way to an energized day is getting enough sleep! |
|              | Really, what's the big deal with sleep? Sleep helps you eat better, manage stress, lessen acne, reduce illness, better concentrate, and learn more!              |
| Breakfast    | Ingrain breakfast into your morning routine! Try whole grain cereals or oatmeal. Add fresh berries or other fruit for extra nutrition! *                         |
|              | Not all cereals are created equal! Compare how much sugar is in your favorite cereals and choose the low-sugar alternative!                                      |
|              | Don't forget eating breakfast can actually increase your memory! Consider making time in your morning routine.   |
|              | In a hurry? Blend together frozen berries, a banana, yogurt, and orange juice for a smoothie! It's a smooth move for breakfast!                                  |
|              | A healthier version of your favorite breakfast foods: Choose whole-grain waffles or pancakes and top with agave, yogurt, peanut butter, or fresh fruit!          |
|              | Natural sugars from fruits can sweeten up low-sugar breakfast cereals and tastes great! *  |
|              | An egg-cellent way to start your day is a veggie-filled omelet! Dice up your favorite veggies with eggs. Even put it between whole grain bread for the go!       |
|              | Experts say eating breakfast can lead to weight loss, not gain, but how? Starting the day with breakfast lessens overeating at other meals!                      |
|              | Trouble fitting breakfast into your morning routine? Keep a supply of healthy to-go foods, like fruit and instant oatmeal, handy when you're on the run! *       |

|                              |   |
|------------------------------|---|
|                              | Want the parfait breakfast? Mix yogurt, fruits, and granola in a to-go container when you're on the run!  |
|                              | Don't skimp on whole grains! They're good for heart and digestive health. Look for the whole grain stamp on your favorite cereals and granola bars!               |
|                              | So what's the big deal with breakfast? Experts say breakfast can increase memory, energy, and attention! *  |
| <b>Fruits and vegetables</b> | Don't get caught up in portion distortion! A serving of cereal is 1 cup and fits in 2 hands cupped together!  |
|                              | Get down to your roots! Veggies like carrots, parsnips, and potatoes are unbeatable when roasted or baked. You can even make fries or chips in the oven! *        |
|                              | Orange you going to try a new fruit today? Look for some a-peeling ones like bananas, grapefruit, or mangoes! *   |
|                              | Serve yourself right! 1 serving of chopped carrots, peppers, or other veggies will fit in a cupped hand. *  |
|                              | Get a hand on serving sizes! A cupped hand will fit one serving of fruit and counts towards the daily recommended 5 servings of fruits and veggies! *             |
|                              | There's more than one way to peel an orange! Preparing fruits and veggies can be tricky. Learn how to slice and dice a new fruit or veggie this week!             |
|                              | Tired of broccoli and carrots? Try a new vegetable this week. Bok choy or kale are great in a salad or stir-fry! *  |
|                              | Want to warm up this winter? Roast squash, potatoes, carrots, and onions. Toss with broth, bay leaf, and spices in a pot. Simmer 30 mins and enjoy!               |
|                              | Round up your fruit! 1 serving of round fruit is about the size of a tennis ball. *   |
|                              | Did you know Seattle has about 20 farmers market around the city? Check out what locals are producing and get ideas for new foods to try!                         |
|                              | For fruits and veggies, look at your plate as half full! A balanced plate should be ½ fruits and veggies, ¼ grains, and ¼ protein!                                |
|                              | Dip into a healthy snack! Try carrots, celery, and peppers with hummus or plain yogurt mixed with spices!   |
| <b>Screen time</b>           | What are you game for? Instead of playing video games, get friends together for board games or take a walk! *   |
|                              | Make TV more active! Get off the couch during commercials and move around. Try lifting weights or floor exercises! *  |
|                              | Playing games until you beat the next level? Sometimes that takes longer than you think. Set a timer for 1 hour. At the buzzer, save your game for another day! * |
|                              | Find a stretch that's just your type! Remember to take breaks from the computer to stretch your legs and mind!  |
|                              | Did you know TV ads can make our food choices worse? Remember that just because its advertised, doesn't mean it's good for you! *                                 |
| <b>Physical Activity</b>     | Exercising isn't always about having a ball! Swimming, dancing, and hiking are great ways to get in shape! *  |

|                                   |  |
|-----------------------------------|--|
|                                   | Milk isn't the only way to build strong bones! Getting moo-ving can help, too! Try bone strengthening exercises like jumping, running, basketball, or tennis.* |
|                                   | What moves you to be active? Find your motivation and establish a routine! You'll feel and look great!   |
|                                   | Did you know Seattle has 430 parks and open areas? Magnuson, Discovery, and Seward Parks are great places to go for a run or play Frisbee with friends!        |
|                                   | Spoiler alert! Warm ups, cool downs, and stretching ARE important to get your body ready for activity and avoid injury! *                                      |
|                                   | Looking for something to do? Visit one of Seattle's community centers for a swim or sign up for a cooking class!   |
|                                   | Does the gym a-weight you? Weight lifting is great for muscles when done properly. Start light and use proper techniques to avoid injury!                      |
|                                   | 3 simple ways to get more exercise: take the stairs, park further away, and choose walking whenever possible!  |
|                                   | How to know your level of intensity with physical activity: You can't sing if you're doing moderate activity and can only say a few words if its vigorous! *   |
|                                   | Have you got in your 60 minutes of physical activity today? Get moving for the mind and body!  |
|                                   | Step into aerobic activity for cardiovascular health! Check out the local YMCA for group exercise classes just for teens!                                      |
| <b>Sugar –sweetened beverages</b> | Milk it for all its worth! Switch to skim or 1% instead of 2% or whole milk for a lower calorie option. *  |
|                                   | Water, you drinking? Replace soda and sugary drinks with plain water. Add a squirt of lime, lemon, or orange for extra flavor! *                               |
|                                   | Did you know orange juice has 10 teaspoons of sugar? Try a splash of OJ with seltzer water instead – it only has 1 teaspoon of sugar! *                        |
|                                   | Did you know drinking soda could lead to dental caries, cavities, and enamel erosion? Consider making the switch to no-sugar beverages!                        |
|                                   | Just forget the sugar! Fruit juices can be just as loaded sugar as soda. Look for “no added sugar” labels on fruit juices! *                                   |
|                                   | Only sports drinks for the game, right? Not so fast! Research says drinking plain water and a balanced diet can keep you hydrated and replace electrolytes!    |
|                                   | Want to try a healthier hot chocolate? Warm up with low-calorie hot chocolate mix and low-fat milk! *  |
|                                   | Bringing a water bottle to school can be a friendly reminder to choose water over soda! You'll save money in the long run, too!                                |
|                                   | Did you know orange juice has 10 teaspoons of sugar? Try a splash of OJ with seltzer water instead – it only has 1 teaspoon of sugar!                          |
| <b>Smoking</b>                    | You can choose not to use tobacco! Even smokeless tobacco can lead to oral cancer and addiction! *   |
|                                   | Lighten up by not lighting up! Smoking leads to bad breath, stained teeth, and smelly clothes and hair!  |



|                             |   |
|-----------------------------|---|
|                             | Let cigarettes know you want them to butt out of your life! Over 80% of adult smokers started before age 18. Don't start! *                                     |
|                             | Smoking doesn't do the body good. Cigarette smoke can lead to discolored teeth, bad breath, and brittle nails!  |
|                             | Quitting smoking can be difficult, but the benefits are huge! Lots of free resources are out there, even for teens. Call 1-800-QUIT-NOW to get started!         |
|                             | Want the skinny on cigarettes? Smoking comes behind sun exposure for things that age the skin faster and leads to premature wrinkles!                           |
|                             | Not exactly the best bang for your buck! People who smoke a pack a day spend \$1,887.05 per year on cigarettes!   |
|                             | Just because you don't smoke, but hang around people who do, it can still be bad for you! Secondhand smoke can leave clothes smelly and cause cancer!           |
|                             | Are friends pressuring you to smoke? It's okay to say no. Be firm and don't budge to peer pressure! *   |
|                             | Did you know tobacco use can affect almost all organs in the body and increases your risk for many cancers and diseases? Reduce your risk by not using tobacco! |
| <b>Alcohol</b>              | Think your best friend drank too much and shouldn't drive? Say something. One decision could save lives, including yours! *                                     |
|                             | Do you know the consequence of drinking? Teen drinking can lead to health problems, fatal injury, and poor school performance.                                  |
| <b>Stress</b>               | Step back and just breathe! When stressful situations arise, react first with a deep breathe to calm down.  |
|                             | We can't stress it enough! Managing stress is good for the mind and body. Think of what helps you relax and make time each day for them! *                      |
|                             | Take a breather for a stress reliever! It's okay to take a second to gather your thoughts before addressing an issue.   |
|                             | Do you feel like you're being bullied? Don't just let it go, talk to someone.   |
|                             | Dating shouldn't be stressful. Talk to your partner if you feel things are rocky. Reach out to friends for support! *   |
|                             | 1 in 5 high school students are bullied at school. Are you one? If so, tell someone. Don't let bullies take over your life.                                     |
|                             | What causes you stress? Talking in class? Commitments? Conflict with friends? Identify what makes you tense and take action to feel relaxed! *                  |
|                             | Overwhelmed trying to balance school, activities, and friends? Take a deep breath! Organize your schedule and take time for you every day! *                    |
|                             | Did you know long-term stress can lead anxiety, depression, physical illness, and aggression? Make sure you address stress before it takes over! *              |
| * Message tested with teens |   |

## Appendix B

| Original Message<br>(Topic: Sleep)   | Changed message   | Comments related to message  | Final Message   |
|--|---|--|---|
| So how're you tracking your sleep? Keep a sleep diary of when you go to bed, sleep, wake up, nap, exercise, and drink caffeine to see what affects your sleep!   | Did not keep  | Good idea but don't think anyone would want to go through that effort; most people would not be able to do that; can't do that; I just fall asleep   |   |
| 3 steps to making your room bed-er to sleep: remove electronics, create a quiet and relaxing environment, and make your bed comfortable                          | Get a bed-ter night sleep and create a relaxing, quiet environment by removing electronics!   | Helpful advice to sleep better; clever; phones can be more distracting than TVs in room; removing electronics can be hard; stop getting distracted by other people, turn off phone, exhausting self to fall asleep                         | <b>Get a bed-ter night sleep and create a relaxing, quiet environment by removing electronics!</b>                                      |
| The more you sleep the better you feel right? Not exactly. Staying up late, sleeping in and pulling all-nighters are sleep patterns you don't want to fall into! | The more sleep the better you feel right? Not exactly! Staying up late, sleeping in, and pulling all nighters are sleep patterns you don't want to fall into! | Too general, why shouldn't you fall into them? Giving a fact would help.   | <b>This might be alarming, but teens that stay up late, sleep in and pull all-nighters can be more depressed and have lower energy.</b> |
| Make sure you get 9 hours of sleep tonight.  | Make it a goal to get to bed on time tonight. Remember to aim for 9 hours of sleep every night  | Good reminder to try and get enough sleep; good reminder, not always realistic. Some people just have trouble. Does the reminder actually enforce sleeping more that night? ; I don't make it to bed on time because 9:00 is way too early | <b>It might be hard, but make it a goal to get to bed on time tonight. Remember to aim for 9 hours of sleep every night!</b>            |

| Original Message<br>(Topic: Breakfast)  | Changed message  | Comments related to message   | Final Message   |
|---|--|---|---|
| Ingrain breakfast into your morning routine! Try whole grain, low-sugar cereals or oatmeal. Add fresh berries or other fruit for extra nutrition!               | Ingrain breakfast into your morning routine! Try whole grain cereals or oatmeal. Add fresh berries for extra nutrition!                                  | "I like this and do it already"; I don't have time to eat breakfast it makes my stomach hurt; tips/recipes for things to take to school would be helpful  | <b>Ingrain breakfast into your morning routine! Try whole grain cereals or oatmeal. Add fresh berries or other fruit for extra nutrition!</b>                   |
| Add berries to your favorite whole-grain and low-sugar cereal this AM.  | Natural sugars from fruits can sweeten up low-sugar breakfast cereals and tastes great!  | Like suggestions; add something new to your cereal; "Then people know what to do instead of just saying something is bad."  | <b>Natural sugars from fruits can sweeten up low-sugar breakfast cereals and tastes great!</b>  |
| Are you having trouble fitting breakfast into your schedule? Plan ahead. Set out dishes and dry ingredients, prep foods, or make a to-go meal the night before. | Trouble fitting breakfast into your morning routine? Keep a supply of healthy to-go foods, like fruit and instant oatmeal, handy when you're on the run! | Good advice; seems like they would take a lot of time beforehand and I don't really have time to do these things the day before for the morning   | <b>Trouble fitting breakfast into your morning routine? Keep a supply of healthy to-go foods, like fruit and instant oatmeal, handy when you're on the run!</b> |
| What's the big deal with breakfast? Experts say breakfast can increase memory, energy, and attention.   | So what's the deal with breakfast? Experts say breakfast can increase memory, energy, and attention!   | Having the question at the beginning, then answering the question is more helpful than just saying it directly; questions are good; you have to ask yourself and saying it out loud reinforces it | <b>So what's the big deal with breakfast? Experts say breakfast can increase memory, energy, and attention!</b>   |

| Original Message<br>(Topic: Fruits and vegetables)   | Changed message  | Comments related to message   | Final Message   |
|--|--|---|---|
| 1 serving of fruit is about the size of a tennis ball.   | Round up your fruit! 1 serving of round fruit is about the size of a tennis ball.  | Didn't see where it was going   | <b>Round up your fruit! 1 serving of round fruit is about the size of a tennis ball.</b>  |
| Get down to your roots! Veggies like carrots, parsnips, and potatoes are un-beet-able when roasted or baked. You can even make fries or chips in the oven! | Get down to your roots! Veggies like carrots, parsnips, and potatoes are un-beet-able when roasted or baked. You can even make fries or chips in the oven! | "I like the puns"; informational side of things; better than saying "Have you eaten enough fruit today?"; less nagging  | <b>Get down to your roots! Veggies like carrots, parsnips, and potatoes are un-beet-able when roasted or baked. You can even make fries or chips in the oven!</b> |
| Orange you going to try a new fruit today? Look for some a-peeling ones like bananas, grapefruit, or mangoes.  | Orange you going to try a new fruit today? Look for some a-peeling ones like bananas, grapefruit, or mangoes!  | Don't get it. Kind of confusing because it splits onto next line; May need something else for people who don't like fruit. Adding fruit to smoothies or yogurt.   | <b>Orange you going to try a new fruit today? Look for some a-peeling ones like bananas, grapefruit, or mangoes!</b>  |
| Choosing a variety of fruits and vegetables doesn't have to be hard. Try going for an assortment and try something new this week!                          | Tired of broccoli and carrots? Try a new vegetable this week. Bok choy and kale are great in a salad or stir-fry.  | What isn't a vegetable? French fries aren't really a vegetable; "have you ever tried broccoli or something weird and strange and quirky. Have you tried bok choy before? Gets people curious and get out and do something new. And then are like, I like this. I should do this more."  | <b>Tired of broccoli and carrots? Try a new vegetable this week. Bok choy or kale are great in a salad or stir-fry!</b>   |
| Eat 5 servings of fruits and vegetables today.   | Get a hand on serving sizes! A cupped hand will fit one serving size of fruit. Aim for 5 servings of fruits and vegetables today!                          | Direct; good helpful facts; keep in mind of not having to have a measuring cup when they eat; "often times told to only get so much of this or that, but don't know how big a serving is"; don't actually know what a serving size is so if combined with tennis ball message, it would help; getting reminded about eating vegetables will make me feel guilty | <b>Get a hand on serving sizes! A cupped hand will fit one serving of fruit and counts towards the daily recommended 5 servings of fruits and veggies!</b>        |

|   |  |  |   |
|---|--|--|---|
| Serve yourself right! Make sure you're getting the appropriate serving size of fruits and vegetables. | Give a high 5 for fruits and veggies! Aim for 5 servings of fruits and veggies. 1 serving of chopped carrots, peppers, and radishes will fit in a cupped hand. | Kind of nice to have those reminders; specify what a serving size is; how much of something is a serving size? Relate to shape of food. Mango and tennis ball, not helpful. Apply tennis ball to round fruits; too general, specific food and serving sizes, go into detail. | <b>Serve yourself right! 1 serving of chopped carrots, peppers, or other veggies will fit in a cupped hand.</b> |
|---|--|--|---|

| Original Message<br>(Topic: Screen time)  | Changed message   | Comments related to message  | Final Message  |
|---|---|--|--|
| Playing games until you beat the next level? Sometimes that takes longer than you think. Set a timer for 1 hour. At the buzzer, save your game for another day! | Playing games until you beat the next level? Sometimes that takes longer than you think. Set a timer and at the buzzer, save your game for another day! | Offensive. Plays video games and know I shouldn't do it, even though it's true I shouldn't; that's really good. Don't really think about it until 3 hours later.   | <b>Playing games until you beat the next level? Sometimes that takes longer than you think. Set a timer for 1 hour. At the buzzer, save your game for another day!</b> |
| Did you know TV ads can make our food choices worse? Remember that just because its advertised, doesn't mean it's good for you!                                 | Did you know TV ads can make our food choices worse? Remember that just because its advertised, doesn't mean its good for you!                          | "I really can connect to this one. TV ads, everything is beautiful. Cook it for a minute and it looks like it came out of a gourmet kitchen."  | <b>Did you know TV ads can make our food choices worse? Remember that just because its advertised, doesn't mean it's good for you!</b>                                 |
| What are you game for? Instead of playing games on your TV, computer, or phone, get friends togetehr for game night and play board games or get outside!        | What are you game for? Instead of playing video games, get friends together for board games or go outside!  | Don't really get this (board games); board games more realistic  | <b>What are you game for? Instead of playing video games, get friends together for board games or take a walk!</b>   |
| Make TV more active! Get off the couch during commercials and get moving! Try yoga, lift weights, or do jumping jacks while you wait!                           | Make TV more active! Get off the couch during commercials and move around. Try lifting weights or floor exercises!                                      | "I've done this and it's helped me a lot"; If an avid TV watcher, this probably wouldn't motivate them; I can't realistically imagine somebody seeing an infomercial and doing jumping jacks. People change channels through commercials; I like the idea. I'm all about watchign TV with music on. Then you're not really sucked in. Seeing images but the sound really comes through and really grabs you. | <b>Make TV more active! Get off the couch during commercials and move around. Try lifting weights or floor exercises!</b>  |

| Original Message<br>(Topic: Physical activity)   | Changed message  | Comments related to message  | Final Message   |
|--|--|--|---|
| Have you got in your 60 minutes of physical activity today? Get moving for the mind and body!  | Have you got in your 60 minutes of physical activity today? Get moving for the mind and body!  | Fun it up. Make it less boring.  | <b>Have you got in your 60 minutes of physical activity today? Get moving for the mind and body!</b>  |
| Milk isn't the only way to build strong bones, getting moo-ing can help too! Jumping, running, basketball, and tennis can help strengthen bones!             | Milk isn't the only way to build strong bones! Getting moo-ing can help, too! Try bone strengthening exercises like jumping, running, basketball, or tennis.     | Looking at the bigger picture rather than just milk to build strong bones  | <b>Milk isn't the only way to build strong bones! Getting moo-ing can help, too! Try bone strengthening exercises like jumping, running, basketball, or tennis.</b> |
| What level of intensity is your work out? Aim for moderate to vigorous. You'll breathe harder and feel your heart beat faster than normal.                   | What does it mean to get 60 minutes of moderate to vigorous activity a day? It means you breathe harder and your heart beats faster than normal when exercising! | "My teacher would tell us if you can sing a song while your running, your not running hard enough. I feel like, if it was, kind of talked down so that where we can relate to it or sounds like more fun, we might get into it more" | <b>How to know your level of intensity with physical activity: You can't sing if you're doing moderate activity and can only say a few words if its vigorous!</b>   |
| Despite what some say, warm ups, cool downs, and stretching are really important. It gets your body ready and helps prevent injury and increase performance. | Spoiler alert: warm ups, cool downs, and stretching ARE important to get your body ready for activity and avoid injury!  | Stretching is important  | <b>Spoiler alert! Warm ups, cool downs, and stretching ARE important to get your body ready for activity and avoid injury!</b>                                      |

| Original Message<br>(Topic: Sugar-Sweetened Beverages)  | Changed message   | Comments related to message  | Final Message  |
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| Aim for zero sugary drinks today.   | Did not keep  | A bit too straight forward; I like when there's a fact. Then, it's not like someone telling you what to do.  |  |
| Milk it for all its worth! Milk has necessary nutrients for bone health and growth. Switch to skim or 1% instead of 2% of whole milk. | Milk it for all its worth! Milk has important nutrients for bone health and growth. Switch to skim or 1% instead of 2% or whole milk.                       | Facts are helpful; "Milk information has been stressed so much to us since we were little, the ads, we know milk is good. We've heard it a lot."   | <b>Milk it for all its worth! Switch to skim or 1% instead of 2% or whole milk for a lower calorie option.</b>   |
| Don't let soda sweet talk you. Look for the unsweetened varieties of sodas and even iced tea and fruit juice.                         | Did you know orange juice has 10 teaspoons of sugar? Try a splash of OJ with seltzer water instead -- it only has 1 teaspoon of sugar!                      | "If you're receiving a text message, you don't want a text message from someone who's not your mother trying to sound like your mother."   | <b>Did you know orange juice has 10 teaspoons of sugar? Try a splash of OJ with seltzer water instead – it only has 1 teaspoon of sugar!</b>                       |
| Just forget the sugar! Even fruit juices can be high in sugar like soda. Next time look for "no added sugar" labels on fruit juices.  | Just forget the sugar! Fruit juices can be just as loaded with sugar as soda. Look for "no added sugar" labels on fruit juices!                             |  | <b>Just forget the sugar! Fruit juices can be just as loaded sugar as soda. Look for "no added sugar" labels on fruit juices!</b>                                  |
| Don't be a soft-y for soft drinks. Soft drinks, like soda, sports drinks, and juices, can be loaded with sugar and calories.          | Only sports drinks for the game, right? Not so fast! Research says drinking plain water and a balanced diet can keep you hydrated and replace electrolytes! | Trying to make fun and light, but I wouldn't want that. Want something more serious, though this could be my personality, since this would be a serious commitment; instead of attacking soda, encourage water; already know, everyone knows it. Sometimes its hard to avoid; parents buy soda, of course your going to choose that over water. mentality around soda, incorporated into meals. family influence on drinking habits. | <b>Only sports drinks for the game, right? Not so fast! Research says drinking plain water and a balanced diet can keep you hydrated and replace electrolytes!</b> |



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| <p>Water, you drinking?</p> <p>Replace soda and sugary drinks with plain water. Add a squirt of lime, lemon, or orange for extra flavor.</p> | <p>Water, you drinking?</p> <p>Replace soda and sugary drinks with plain water. Add a squirt of lime, lemon, or orange for extra flavor!</p> | <p>If didn't drink water, adding flavoring might be helpful; like this; if I want to drink water, I'm just going to drink water. Something about this sits a little bit weird, but unsure why -- maybe so used to drinking water, that changing it would go against tradition; little facts about how much water you actually need</p> | <p><b>Water, you drinking? Replace soda and sugary drinks with plain water. Add a squirt of lime, lemon, or orange for extra flavor!</b></p> |
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| Original Message<br>(Topic: Stress)   | Changed message   | Comments related to message   | Final Message   |
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| We can't stress it enough!<br>Managing stress is good for the mind and body. Think of what helps you relax and make time each day for them!         | We can't stress it enough! Managing stress is good for the mind and body. Think of what helps you relax and make time each day for them!                | I like the word play; nice reminder, "In high school there's periods of time when it's really stressful. That'd be kind of helpful. a reminder of something you can do."; "The ones with stress, um, I guess youth, they don't really know how to cope with stress... I kind of experienced that this year and that kind of relates to me... so definitely knowing about it will be really helpful" | <b>We can't stress it enough! Managing stress is good for the mind and body. Think of what helps you relax and make time each day for them!</b>         |
| What causes you stress?<br>Talking in class?<br>Commitments? Conflict with friends? Identify what makes you tense and take action to feel relaxed!  | What causes you stress? Talking in class? Commitments? Conflict with friends? Identify what makes you tense and take action to feel relaxed!            | "That's been huge! I've been stressed all my life!"; Thinking about stress makes me more stressed out, having message about stress might stress me out even more  | <b>What causes you stress? Talking in class? Commitments? Conflict with friends? Identify what makes you tense and take action to feel relaxed!</b>     |
| Did you know long-term stress can lead to anxiety, depression, physical illness, and aggression? Make sure you address stress before it takes over. | Did you know long-term stress can lead to anxiety, depression, physical illness, and aggression? Make sure you address stress before it takes over you! | That was good; stress is huge; "That's pretty true on all levels. I don't express myself all the time. Messages on stress are really important. It'll just put in a bad mood and it feels permanent. Talking to anyone, friends, family, stranger -- it helps."; consequences if you didn't do something  | <b>Did you know long-term stress can lead anxiety, depression, physical illness, and aggression? Make sure you address stress before it takes over!</b> |

| Original Message<br>(Topic: Tobacco)  | Changed message   | Comments related to<br>message  | Final Message  |
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| Don't get in the habit. Don't smoke.  | Did not keep  | "Don't" too authoritative; say certain statistic about smoking. Don't necessarily scare people into not smoking, but let them know what the risks are; not really in detail, kind of telling you what to do and not really making an argument for it; "My age group in particular really doesn't respond to that kind of message. they like to be inspired. If they're inspired, they'll do a lot more"   |  |
| Are friends pressuring you to smoke? It's okay to say no. Be firm. Be strong. And don't budge to peer pressure. | Are friends pressuring you to smoke? It's okay to say no. Be firm. Be strong. And don't budge to peer pressure. | "It's a reminder in the moment. Smoking, it's tempting. It might go through to them and get to their senses. In the moment it's sometimes hard to say no." ; "You hear don't budge to peer pressure so much, like don't give into your friends that are doing bad things. But in the end, it's such a huge percentage that actually does give into their friends. I don't really know if there's a way to stop that, it's just natural I guess. I don't know what they could do. If you could build on this a little bit." ; if being peer pressured, might not choose to smoke | <b>Are friends pressuring you to smoke? It's okay to say no. Be firm and don't budge to peer pressure!</b> |
| You can chew-se not to use tobacco! Even smokeless tobacco can lead to oral cancer and addiction.               | You can choose not to use tobacco! Even smokeless tobacco can lead to oral cancer and addiction.                | Only thing that got me. Choose, not chew-se. The puns are a bit much.   | <b>You can choose not to use tobacco! Even smokeless tobacco can lead to oral cancer and addiction!</b>    |

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| Let cigarettes know you want them to butt out of your life! Over 80% of adult smokers started before age 18. Don't start! | Let cigarettes know you want them to butt out of your life! Over 80% of adult smokers started before age 18. Don't start! | A little bit intense that it starts at 18; point not strong enough; stuff you should already know | <b>Let cigarettes know you want them to butt out of your life! Over 80% of adult smokers started before age 18. Don't start!</b> |
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| Original Message<br>(Topic: Alcohol)   | Changed message   | Comments related to<br>message  | Final Message  |
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| Think your best friend drank too much and shouldn't drive? Say something. It can save lives, including yours | Think your best friend drank too much and shouldn't drive? Say something. It can save lives, including yours! | Relating the message to the reader; too wordy, just get to the point. | <b>Think your best friend drank too much and shouldn't drive? Say something. One decision could save lives, including yours!</b> |