Kinesiology 173  
Cardiovascular Assessment

**Student Learning Objectives**

1. Familiarize students with proper techniques for measuring heart rate and blood pressure.
2. Provide hands-on practice with these techniques.
3. Gain an understanding how body position and exercise should influence these measures.

**Equipment Needed**

Blood Pressure Cuff  
Sphygmomanometer  
Stethoscope  
Timing Device  
Automatic Blood Pressure Cuff  
Dynamometer

**Procedures**

1. **Lecture**: Introduction to cardiovascular assessment techniques and procedures.
2. **Activity**:
   a. Work with a partner or group of 3 people for the duration of the lab. Alternate roles so that all individuals have the opportunity to be the “subject” and the “experimenter”.
   b. Using the methods described in the proceeding lecture, determine your subjects HR using both palpation (doing both the radial and carotid) and auscultation (i.e., stethoscope). Fill in the table below:
   c. Using the methods described in the proceeding lecture, determine your subjects BP 3 separate times, with a minimum of 1-2 minutes in between measures.  
      Remember to listen for the following sounds (called Korotkoff sounds):
      i. Onset of sharp rhythmical thuds = Systolic Pressure  
      ii. Silence OR the last sound before silence = Diastolic Pressure

<table>
<thead>
<tr>
<th>Method</th>
<th>Counted Beats</th>
<th>Multiply to convert to Beats/minute</th>
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</thead>
<tbody>
<tr>
<td>Radial Pulse (30 sec)</td>
<td></td>
<td>× 2</td>
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<tr>
<td>Carotid Pulse (15 sec)</td>
<td></td>
<td>× 4</td>
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<tr>
<td>Auscultation (10 sec)</td>
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<td>× 6</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Time</th>
<th>SBP (mmHg)</th>
<th>DBP (mmHg)</th>
<th>Unit of Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td>mmHg</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td>mmHg</td>
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<tr>
<td>3</td>
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<td></td>
<td>mmHg</td>
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d. Once you are comfortable with the basic techniques for these measures. Have your subject complete the conditions below and measure HR and BP at the end of each condition. For body position conditions, have the participant remain in that body position for the measurements.

i. Calculate mean arterial pressure as: $MAP = \frac{1}{3}(SBP-DBP) + DBP$

<table>
<thead>
<tr>
<th>Counted Beats</th>
<th>HR</th>
<th>SBP</th>
<th>DBP</th>
<th>MAP</th>
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</thead>
<tbody>
<tr>
<td><strong>Body Positions:</strong></td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>Sitting</td>
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<tr>
<td>Standing</td>
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<tr>
<td>Laying Down</td>
<td></td>
<td></td>
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<tr>
<td><strong>After Physical Activities:</strong></td>
<td></td>
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<td></td>
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<tr>
<td>30 Jumping Jacks</td>
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<tr>
<td>20 second Dynamometer Squeeze</td>
<td></td>
<td></td>
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<tr>
<td><strong>During Muscle Contraction:</strong></td>
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<td></td>
<td></td>
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<tr>
<td>3 min Handgrip at 30% of Max Strength*</td>
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</tbody>
</table>

*Take a BP measure starting at 2:15, this should allow you to finish the reading approximately as they finish. Remind the subject to breathe and not hold their breath.

3. **Discussion:**
   a. What happens to HR and BP in different body positions?
   
   b. What happens to HR and BP after physical activity? Was the response the same to both activities?
   
   c. What happens to HR and BP during muscular contraction?
Electronic communication is the primary method of communication in most workplaces. In fact, David Parnell, a legal recruiter, communication coach and author of *In-House: A Lawyer’s Guide to Getting a Corporate Legal Position*, says that e-mail surpassed telephone use as early as 2007. “With that, one’s ability to write effective and professional e-mails is now just as or more important as their verbal and non-verbal skills when it comes to communication.” And yet, we continue to see shoddy e-mails hamper our work and businesses.

How do poorly constructed e-mails hurt us?

For one, many e-mails containing important information are overlooked because of an extraneous subject line, an impersonal salutation, or dull, rambling paragraphs, among other things. When important e-mails are missed, miscommunication follows and business or productivity suffers.

“Careless, misleading, poorly-written or ineffective e-mail messages can cause serious harm, confusion, unnecessary back-and-forth, loss of time and productivity, and frustration,” says Joyce K. Reynolds, an expert business coach.

Even if the recipient does read your substandard e-mail and manages to grasp the important information without too much confusion or frustration, he or she may be left with a poor impression of you.

“The key is to consciously think about the impression one wants to make, and needs to make, on the individual to whom they are sending the e-mail,” says Skip Weisman, a leadership and workplace communication expert. “Always look to put your best foot forward. As they say, you never get a second chance to make a good first impression and, in today’s high-tech world, those first impressions are happening faster than ever and are much harder to overcome, because people are moving on to the next thing.”

Egan concurs. She says it is extremely important that your e-mail correspondence at work be both professional and effective, because “frankly if they are not, it could be a career limiting behavior.” Your clients, managers and co-workers “draw conclusions about your professionalism every time anything you do touches them, and e-mail provides more touches in a day than telephone or in person discussions,” she adds. “To use poor grammar, to ramble, to misspell, etc., provides a written documentation of your less-than-professional way of communicating. A poorly worded or crafted e-mail also may cause others to judge your leadership abilities.”

Reynolds agrees that how we communicate conveys who we are and determines how we are seen. “When properly employed, e-mail can set us apart as professional, smart, competent and courteous,” she says. “Or, it can reveal us as rude, self-centered, unfocused, indecisive or unable to problem-solve. In every instance, carefully-written e-mail can highlight the sender’s serious, intelligent and quality-oriented way of working.”

Occasionally even flawless, succinct and engaging e-mails with powerful subject lines, personalized salutations and perfect grammar, spelling and punctuation fail to yield a response or end up in the trash bin. Why? Maybe e-mail wasn’t the most
effective communication method for the matter you wanted to discuss. Maybe you copied multiple people on the e-mail, which led the main recipient to believe it was spam. Maybe you annoyed the recipient by sending the same e-mail repeatedly or inundating their inbox at 3 a.m. Needless to say, when constructing an e-mail for work, you need to think about more than just the content and tone of the message.

Your audience is another thing to consider when sending an e-mail. Etiquette standards and expectations vary depending on the industry or company you work for and the person with whom you’re corresponding, Weisman says. But as a general rule of thumb, you’ll always want to be as professional as possible.

“Remember that e-mail messages are a permanent written record of your communication, and once the e-mail is sent, you can no longer control who sees that message,” Egan says. “If the message is inappropriate or improper or just stupid, once it gets into the wrong hands there can be further complications. An accusatory or nasty e-mail can be career limiting, once again due to the fact that it is a written record and can fly through cyberspace.”

So, what makes an e-mail good or bad?

A good e-mail is one that is effectively written, clear, concise, grammatically correct, and has no misspellings, Egan says. “I find it interesting to note that just about everyone I talk to believes that they craft their e-mails in this way, but the actual e-mails that are written many times do not follow these simple guidelines. An effectively written e-mail gets results, without distracting the reader because of poor grammar, structure or spelling.”

Weisman says that a good e-mail should get the response and the result you desire while presenting yourself in the best possible way, depending on context and audience, so the recipient develops a positive impression of you. The message should be “short and succinct, no more than two or three paragraphs, should have a specific purpose (it’s either giving information, requesting information or attempting to prompt further communication), and it should have enough detail to allow the person to respond effectively without asking for more information, yet it doesn’t provide too much unnecessary information.”

A bad e-mail, on the other hand, is one that fails to accomplish any of the above.

The experts weighed in on what exactly you should and shouldn’t do, from subject line to signature. Here’s their advice:

**Always write a powerful subject line that will get noticed.**

Make sure it is related to the purpose or content of the e-mail and that it isn’t misleading, Weisman says.

“The busy executive is looking for reason to delete, rather than read, e-mails,” Parnell says. “This leaves your subject line in a consequential position, its purpose being solely to grab attention and get the recipient to open the e-mail, period. You are not selling them here, amusing them, befriending them or any other variation of socializing. You are just getting them to open the e-mail.”

**Always include a personalized salutation.**

Get the person’s name—and address them by it. Make sure it’s spelled correctly!

Reynolds says to offer a courteous greeting or introduction, as well.

**Always get right to the point.**

Place your main point, request, or question in the very first sentence of your message, Egan says.

**Always keep the message short and succinct.**

“No one is reading through 12 paragraph e-mails,” Parnell says. “This, I’m sure, is what sparked the ‘five sentences’ rule. Though I disagree that any e-mail can be done in five sentences, brevity is certainly a rule.”

Weisman suggests limiting your messages to two to three paragraphs. Keep them short and to the point. People are turned off by bulky, long-winded messages. Who has the time to read those?
Always make a note of any attachments in the e-mail.

If you’ve attached important or relevant documents, mention them in the message. Those attachments can easily be overlooked by your recipient.

Always ensure that spelling and punctuation is accurate.

Use spell check, and double check yourself, because spell checkers rarely notice correctly spelled wrong words, Weisman says.

Always use a readable font.

Construct your message in a font size and color that is easy to read, Egan suggests.

Have a specific call to action with response time, if desired.

“Never leave open ended times like ‘please respond as soon as possible.’ That is way too vague and means nothing to the recipient. People are much more likely to comply if the deadline is specific,” Weisman says.

Always include a signature line.

Parnell suggests that you have a “full” and a “reply” signature. “E-mail trails can go on for days when you include a full signature with every reply.”

A full signature will have name, title, address, phone, fax, web, e-mail, and disclaimers. A reply signature should be much simpler, with just your name and contact information.

Always be conscious of your tone.

E-mail is one-dimensional, and tone in an e-mail can be easily misconstrued, since there is no body language, Weisman says. When you think about your tone, consider your audience.

Always double check that you’re sending the e-mail to your intended recipient(s).

There are many different consequences that can result from this type of error. Don’t be careless.

Always review the message before you send it.

Remember that once the message is out there, it may be made public, deliberately or accidentally, Reynolds says.

NEVER WRITE IN ALL CAPS.

The recipient may feel you’re shouting at him.

Never write something you wouldn’t want others to see.

“Don’t write something that you wouldn’t want your police chief, mother, priest or spouse reading,” Parnell says. “There are way too many stories floating around out there about e-mail lips sinking ships.”

E-mails are forever, Weisman adds. “They can always be retrieved by the IT department if necessary.”

Never be offensive.

“Don’t use profanity, ethnic barbs, or sexist verbiage,” Egan says. “Never criticize the boss or the company by e-mail.” That includes forwarding messages that are off-color, offensive, racist, or obscene.

Never throw anyone under the bus by e-mail. “That is, don’t put criticisms in writing,” she adds.

“Avoid saying anything in e-mail that you would not want to see in print or heard spoken as a quote from you,” Reynolds concludes.

Avoid short-hand, texting language (abbreviations), emoticons, and smiley faces.

Not everyone is familiar with them, and they’re too informal, Weisman says.
Never use the ‘high priority’ option unless it’s truly high priority.

Also, use the words “URGENT” and “IMPORTANT” sparingly, and only when they are true, Egan says.

Never send e-mail messages when you are emotional.

Regardless of how you try to mask it, people will feel it, Egan says. You also might say something you regret.

Avoid using e-mail to discuss issues among several people.

The threads become diffused, and the content is difficult to follow. Call a meeting instead, Egan says.

Never write multiple e-mails at one time.

Multiple windows open at any given time can, and do, become confused, and often enough messages are sent to unintended recipients, Parnell says.

Avoid using BCC to rat out your co-workers.

Blind copying turns you into the rat, Egan says.

Don’t resend the same e-mail over and over again.

A follow-up is usually acceptable, but you don’t want to harass the recipient.

Don’t “reply all” unless everyone needs to get your response.

Copy or reply only to those who really have to receive the e-mail, Egan says.

Avoid using e-mail to provide “constructive criticism” or to discuss more serious matters.

“Never hide behind an e-mail with something that should be said face-to-face, or at a minimum verbally over the phone,” Weisman says. “It’s cowardly and will only exacerbate whatever issue needs to be addressed.

Avoid sending an e-mail message in the middle of the night.

You’ll be much better off saving it and reviewing it by the light of day before hitting the send button, Egan says.