# New MS1 Medical Equipment Requirements and Guide

#### Welcome to UT Southwestern!

Medical school is a remarkable journey in which you'll learn countless new words, facts, and concepts as well as brand new skills. Acquiring these skills (like examining the hearts, lungs, nerves, eyes, and ears of your future patients – to name a few) requires a lot of practice – both during formal teaching sessions with your Colleges mentor and also on your own.

To be successful, you also need to own the right equipment to learn and practice with.

# We expect all students to have required medical equipment in their possession on day one of medical school.

This guide will help you buy what you will attest to owning at the start of school. For those of you who receive financial aid, funds for these purchases are included in your package. You have numerous options for purchasing your medical equipment, and you are welcome to buy them wherever you choose. We highly recommend considering using the UTSW University Store which offers options for purchase <u>here</u>. Eligible students who purchase through the University Store by the published deadline may be able to use financial aid expected for fall 2022 to pay for these instruments. Please pay close attention to the deadlines on the purchase form. If you submit your purchase form by July 1, 2024, you will be able to pick up your equipment the first week of August.

Please reach out to us any time with questions.

Sincerely,

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## The Basics:

#### What equipment am I expected to purchase?

All students must have the following equipment on day one of medical school:

- Stethoscope
- "Diagnostic Set" which contains an ophthalmoscope & an otoscope
- Reflex hammer (any type)
- Tuning fork (128 Hz)

Optional but recommended:

• Sphygmomanometer (blood pressure cuff)

#### I'd rather someone just tell me what to order rather than reviewing options on my own. What should I choose?

These are suggestions vetted through several Colleges mentors to be helpful, but you are welcome to purchase whatever you prefer based on further information below:

- 1. Stethoscope: Littmann Cardiology IV
- 2. Diagnostic Kit: Welch Allyn 3.5V Diagnostic Set with Coaxial LED Ophthalmoscope, Macroview Basic LED Otoscope, Lithium Ion Rechargeable Handle (71-SM2LXU)
- 3. Reflex hammer: Telescoping Babinski
- 4. Tuning fork: 128 Hz.

For those who want to know the options and make their own choice, the stethoscope and diagnostic kits are the most expensive and involve the most options. Here are some general comments and price ranges:

Instrument	Approx. \$	Comments
Stethoscopes	\$80 - \$500	Everyone needs a good stethoscope!
Diagnostic kits	\$400 - \$1200	Many clinic rooms and hospital rooms do not have these so important to have your own. Also important for practice.
Reflex Hammer	\$3 - \$12	Cheap & handy on clerkship rotations.
Tuning Fork(s)	\$7 - \$12	Cheap & handy on clerkship rotations.
Sphygmomanometer	\$50 - \$250	Optional. But great to have to practice the nuanced skill of measuring blood pressure on your own.

### Stethoscopes

This is the most important piece of equipment you will acquire. It will be your 'best friend' throughout sessions with your Colleges mentor and future clerkship rotations.

Because many of the sounds you will want to hear are subtle, you will want to learn with a high quality stethoscope. Although high quality ones are more expensive, they are quite durable. Most students continue to use the same one through residency and beyond, so you'll get years of use from this purchase.

The best stethoscopes have a single tube that contains two lumens, "tunable" technology, short tubing, and comfortable earpieces. Some stethoscopes have completely separate rubber or silicone tubes (each with a single lumen) going to the ears, but this design can introduce extraneous noise as the two tubes bump and rub against each other. We recommend only purchasing those that have a single tube with two lumens. See examples below:



Single Tube (two lumens) on Left (Recommend) Two Tubes (one lumen each) on Right (Do not recommend)

Some heart sounds are high-pitched, and some are low. For this reason, it is important to have "tunable" technology that allows you to focus on these different frequencies. There are generally two types of "tunable" technology: pressure and bell/diaphragm systems. The Littmann stethoscopes have a patented design that allows the high-pitched sounds to be best heard by placing firm pressure on the headpiece when it is on the skin; low pitched sounds require light pressure. Alternatively, other stethoscopes have a bell for low pitch sounds and a diaphragm for high pitched sounds. One simply rotates the headpiece on the tubing connector to the desired tuning. Either of these options works well and is a matter of preference.

There are many brands of stethoscopes; many of us have experience with Littmann, DRG (Doctor's Research Group), Welch Allyn, Prestige, and MDF. All of these brands feature highquality stethoscope options. Many also have electronic stethoscope options. These are ideal for hearing impaired practitioners, as the volume can be adjusted. In addition, many can record and playback sounds and/or come equipped with software and adapters, so the sounds can be downloaded and analyzed on your computer. Of course, electronic stethoscopes are the most expensive, and the quality of sounds produced by the electronic stethoscopes does not yet equal the acoustic stethoscopes for those with normal hearing. We would recommend considering this a fun feature but not an essential one.

# **Diagnostic Kits**

Diagnostic kits are attached to many clinic room walls, but medical students need to have their own set for several reasons. First, hospital rooms typically do not have this equipment, and a few clinics lack it as well. You will find these helpful during clinical rotations in those settings. Second, and most important, you need these to be able to practice on your own. The subtle techniques to successfully examine someone's ears or eyes can only be honed with much repetition and independent practice.

The options available for diagnostic kits can be confusing. Our faculty have the most experience with the quality and reliability of Welch Allyn products and recommend considering this brand, but you are free to investigate other options as well. We'll describe what we know about the advantages of Welch Allyn models below, so you can apply this information when evaluating other brands.

The decisions to make regarding diagnostic kits boil down to three choices: What size kit do you want? What kind of oto/ophthalmoscope heads do you want? And what kind of battery handle do you want?

#### What Size Do You Want?

The choices of sizes of kits are, from smallest to largest, the "Basic" Diagnostic Set to the "PanOptic Basic" to "PanOptic Plus". The most commonly used one is the "Basic" Diagnostic Set (Item # 71-SM2LXU). On the other hand, some students opt for one of the "PanOptic" kits (the larger models). These offer optional features and will be discussed further in the next section.

Recommendation: the features of the "Basic" Diagnostic Set (whether Welch Allyn or another brand) offer the most balanced combination of cost, accessibility, and performance.

### What Type of Head Do You Want for Your 'Scopes?

There are options for ophthalmoscopes (Coaxial LED, PanOptic Basic, and PanOptic Plus) and for otoscopes (MacroView Basic LED and MacroView Plus LED for iExaminer). These are all terms you will see when reviewing Welch Allyn products, but other brands may offer similar features, which we'll describe more further below.

For ophthalmoscope heads, some students are choosing the PanOptic ophthalmoscope heads because of the technology that makes it easier to see the retina inside the eye globe. Visualizing the retina is valuable in many common diseases (e.g. diabetes and hypertension). We consider this a fun and helpful feature but not one that is essential for learning this clinical skill. The features of the "Basic" Diagnostic Set are sufficient for learning this skill.

For otoscope heads, Welch Allyn now only offers models with a "MacroView" head which provides a larger field of view at a higher magnification. A new model offers a smartphone appenabled technology called "iExaminer". This is a brand-new offering, and one we don't yet have experience with. Therefore, we'd also consider this a fun and interesting innovation but not required for developing this clinical skill.

#### What Kind of Power Handle Do You Want?

There is no choice of power handle for the "Basic" Diagnostic Set. However, it now only offers the superior Lithium Ion rechargeable handle which is lighter and holds a longer lasting charge than the prior NiCad handles. The "PanOptic Basic" only offers a NiCad handle. Meanwhile, the higher end "PanOptic Plus" offers a new USB-compatible Lithium Ion rechargeable handle. This again is a new offering that we have no experience with yet, and we'd consider it a nice convenience but not required.

You are welcome to look into brands other than Welch Allyn, but we'd recommend considering the features described above when researching other options.

# **Reflex Hammers and Tuning Forks**

There are several choices in reflex hammers, and all work well. However, there are a few caveats to keep in mind. Neurologists prefer the Babinski model ("model 3240" in the figure), but they are cumbersome to carry around unless you purchase the telescoping model (recommended – example in picture on right below). The other two models ("Taylor" or 3210 below; or 3200 below) fit more easily fit in a white coat pocket. All versions are acceptable.

Tuning forks are used during the neurologic examination to test hearing (256 or 512 Hz. models) and vibration sensation (128 Hz. model). You should at least have the 128Hz model in your possession. Purchasing the 256Hz or 512Hz models is optional.



Babinski Telescoping Reflex Hammer on right

Recommendation for hammers: the Babinski Telescoping hammer

### **Sphygmomanometers**

Blood pressure cuffs (sphygmomanometers) are truly ubiquitous in hospitals and clinics, so each student may not need to purchase one. But you probably don't have one in your home, so it's highly recommended (but optional) to purchase one. You may also choose to participate in health care delivery to underserved populations outside of the normal healthcare settings (eg mission trips, health fairs, free clinics, etc) where these may come in handy.

There are many digital automatic cuffs available. These are accurate and great for patients to have in their homes but won't give you an opportunity to practice. We would recommend a cuff that is manual (you must inflate by hand) and where the cuff is placed above the elbow (over the brachial artery).

Good luck, and feel free to contact us if you have any questions!