

# Testing Microdermabrasion Systems

Tests to request and topics to cover when evaluating crystal microdermabrasion systems. Print these pages in preparation for a demonstration by a manufacturer's representative.

First keep in mind what you are trying to achieve with microdermabrasion: abrading the skin with a stream of particles (similar to sand-blasting) and applying vacuum to the skin. Both components of the treatment are important and, to achieve the best results, should be controllable and measurable.

The abrasion exfoliates to expose fresh skin cells and the vacuum draws blood into the dermis, increases circulation promoting the formation of collagen and elastin. The system must indicate what level it is operating at for each treatment so the operator can document the information and use it as a reference in future treatments for that client.

## Topics to cover:

- \* Make sure the abrasion and vacuum qualities are acceptable. (see tests below)
- \* It must not clog. Get a guarantee in writing.
- \* Should utilize any type of crystals.
- \* Is it registered with the FDA?
- \* It must have filters of .1 microns or less. Can it operate near a steam machine?
- \* You must not be required to thoroughly dry the skin before treating.
- \* The waste canisters should be disposable. Do you handle the waste?
- \* The waste filters should be disposable. Do you have to clean them?
- \* If it is a true medical grade system, it must be able to pass all topics and tests.

## Magazine test

Hold the handset to a dark ink printed magazine page for a count of 4 or 5, starting with a low setting and working up to the highest setting on the system. You will end up with 4-6 white spots on the magazine page; this is the abrasion pattern and indicates its controllability. See below for more detail on how to do this test.

## Handset stroke instructions

Does the rep instruct you to "stroke and lift, stroke and lift" or do they have you apply the handset to the skin and keep it on the skin while you make strokes (or passes) without lifting; the "stroke and lift" method delivers inconsistent vacuum so you will get inconsistent results, the other method allows for a very consistent vacuum pressure and consistent abrasion. See below for more information.

## Vacuum Pressure Test

Have the sales rep turn the system to a high setting and ask them (but don't demand) to make a pass on their arm, slowly, from elbow to wrist; this will indicate if the system vacuum is safe. See below for more detail on how to do this test.

## Vacuum Gauge Test

Have the sales rep disconnect the waste container (and waste filter if necessary) and, with the system running, have them block the air intake where the waste components were attached and see if the vacuum gauge needle moves; this tells you if the gauge will accurately measure the pressure being applied to the patient's skin. See below for more detail on how to do this test.

## **How to perform these tests:**

### **The Magazine Test**

The system must deliver an abrasion that is large and even so that the operator can effectively cover the area with as little as one pass of the handset and not over-abrade due to lack of control (some handsets have pin-head sized "hotspots" that can damage skin). The only way to evaluate a systems handset and the abrasion pattern that handset produces is to set the system on what is considered an average setting (mid-range power) and, while counting to 4 or 5, apply the handset tip to a magazine page with dark ink.

The system should "sand-blast" the ink off of the page so that a white spot appears where there once was dark ink. This is called the abrasion pattern. If the white spot is significantly smaller than the eraser of a pencil, odd shaped or extremely faint, the system is not designed to do a proper abrasion and you should stop your evaluation there because it is not worth buying.

If there is an acceptable abrasion pattern, then test the system for the full range of power; start at the lowest setting and test each setting through to the highest setting possible (you should have 4-6 white spots on the magazine when finished: for an example, [click here](#)).

Make sure the abrasion pattern doesn't have a "hot spot" (i.e. if it burned through the page) because that is a potential liability for your business. Remember, this indicates what will be happening to the patient's skin and, if there is a "hot spot", you have the distinct possibility of causing damage.

Don't let them tell you their system produces this type of abrasion pattern because it is "medical grade" and it "has more power than their competitors". It is not that it has too much power, it doesn't have control of the abrasion. Since some companies charge more for models with different handsets (the medical model as opposed to the aesthetician model), make sure you test the system with the handset you will be buying.

### **Vacuum Tests**

The vacuum must be controllable. Since vacuum pressure is not instantaneous (it takes a second or so to build) the handset should be applied to the skin and an area should be covered by stroking back and forth, overlapping each stroke, without lifting the handset from the skin. That is the only way to apply a consistent level of vacuum pressure and, thus, abrading the area in a consistent manner.

If you are instructed to do a stroke with the handset and then lift it off the skin to return to the same starting area for another stroke (i.e., stroke, then lift, stroke, then lift) you are not applying a consistent vacuum pressure and the overall abrasion treatment will be inconsistent.

All handsets will deliver a low level of vacuum pressure when first applied to the skin and, as the stroke is continued, the pressure will build but, unless a stroke is longer than one second, the vacuum pressure will not reach the level that was set by the operator prior to the start of the treatment.

If you use a stroke and lift method, you are delivering a treatment that is not reproducible because you are varying the vacuum pressure, and the abrasion level, in a random manner.

Most systems on the market cannot be operated with the handset in constant contact with the skin since they have a major flaw in the handset design. The manufacturer made the hole where the abrasive material exits the handset too small so there is not enough air allowed through the hole along with the abrasive material.

This creates an excessive amount of vacuum in the handset cap and on the client's skin and can rupture capillaries. The manufacturer recognizes this and instructs the operator to "stroke and lift" so that the vacuum pressure in the handset cap does not build to a dangerous level and

cause damage. To determine this, ask the manufacturer's rep to turn the system to a high setting and make a slow paced pass on their arm, not yours, from their elbow to their wrist. Do not demand this because it may injure this person (if the system is not designed properly). Let the sales rep make this decision. However, if they decline to perform this test, or they will do it only at a low setting and not at or near the maximum, you can be reasonably certain the system is dangerous and you shouldn't buy it. If it makes a pink band on their arm, it is okay; if it makes a very dark pink or red line, it has a poor design that will be an extreme liability. The vacuum gauge must give you a reading of the pressure being applied to the client's skin so you can document it as a reference point for future treatments and allow you to deliver reproducible results. The correct design has the gauge connected between the waste container and the handset so that it measures the pressure in the handset tubing and handset cap which correlates with the vacuum pressure applied to the client's skin. Most systems have the gauge incorrectly attached between the vacuum motor and the waste container/filter. This poorly designed system will measure the vacuum pressure required to pull the air through the waste container, which does not match the pressure in the handset cap. As the waste container fills up with dirty abrasive material and the waste filter gets covered with skin debris and oil, it requires more vacuum power to draw the air through those areas, robbing vacuum pressure from the handset cap and reducing the abrasion power of the system. To determine the design of a system's gauge, disconnect the waste container (and remove the waste filter if necessary, but be careful not to get any crystals into the motor), turn on the system and cover the air intake where the waste container or filter was attached (use your finger to cover this opening). If the needle on the gauge moves, you know it is connected between the motor and the waste container, which is incorrect. Since the gauge in that design is not indicating the vacuum pressure in the handset cap, you, as the operator, would have no idea what is being applied to the client's skin unless you empty the waste container and replace the waste filter before each treatment. Just cleaning the waste filter will not be sufficient.

If the needle on the gauge doesn't move, then reassemble the waste filter and container, disconnect the handset from the system and cover the opening where the handset was connected. The needle on the gauge should move. This indicates it is connected between the waste container and the handset tubing, which is correct. With this configuration, you will know exactly what the system is delivering to the client in terms of vacuum pressure, and abrasion level, regardless of the cleanliness of the waste container or waste filter.