

# How to Determine Temperature and Value in Skin Tones

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One of the most critical skills a makeup artist must have, especially for High Definition makeup work, is a strong grounding in fundamental color theory. All artists must be able to interface with two of its entry level components, temperature and value, in order to correctly match foundation products to skin tones and balance color palettes. Additionally, artists will also have to step up to high functioning knowledge in gray scale and chroma saturation/intensity in order to work makeup effectively in the HDTV format.

Temperature and value is the “portal” of color theory and functions for a lot of what we do in selecting and applying makeup. It first comes into play when deciding on a base color for an exact foundation match to skin. Whether it is bringing the talent’s look forward for HDTV or making up a bride for her wedding you will always have these two rules in skin tonalities as a starting point with any makeup application.

## **Identifying Temperature in Undertones:**

Temperature defines whether the skin’s underlying background tonality, known as undertone, falls into a dominant warm, neutral, or cool category. Temperature is an inherent programmed characteristic of an individual’s pigment profile and it never changes throughout their lifetime.

In order to see all variants in temperature (and values) correctly, the skin should be examined under a full spectrum white light spill (a minimum of 3200 degrees Kelvin up to 5500 degrees Kelvin) or roughly the equivalent of noon day sun. This white light reveals accurate colors in unfiltered bloom to the eye. Most people see color best in higher Kelvin temperatures because of slight color skew perceptions everyone has to some degree in their retinal function.

No two people will see color temperature strengths or steps in values exactly alike, but the margin for accurateness greatly increases when viewing skin in optimal Kelvin temperature for the reasons explained in the previous paragraph. Outdoor lighting between the hours of 10 AM – 3 PM is the best lighting available if you don’t have equivalent studio lighting available. It is the hardest light spill you can have on skin because the Kelvin range is highest, but it is the most accurate revealing light source to the eye. Duplicating this temperature of light in your work setting (such as a tungsten with a minimum 150 watt lamp which has been scrimmed with a quarter blue CTB daylight gel) will give you nearly the same optimal color visibility, and allows warm, neutral and cool variegations and strengths to be seen altogether.

## **Value:**

Value is determining the degree of pigment saturation in the visible surface or top tone. It simply means how light or dark the skin appears to the eye through its temperature. A skin’s given value can gain steps in saturation (darker) depending on exposure to sun, or lose natural strength in pigmentation (lighten) as we age, but temperature always remains consistent.

Full spectrum lighting is also important in reading skin values because you need to assess that degree of pigment saturation in order to match it correctly with foundation products. This is critical so that no lines of demarcation show as a result of improperly matched skin tones.

### **Characteristics of Warm, Neutral, and Cool Dominant Undertones:**

Warm dominant undertones exhibit a greater degree of olive, yellow (sallow), or golden cast pigmentation. A strong indicator of warm temperature is that veins tend to look green under warm skin. More than 85% of people fall into the warm temperature category with the occasional combination of yellow orange cast skin.

Cool dominant undertones give off a ruddy (pink) or slightly bluish cast, which is not to be confused with separate surface tone issues as we will discuss below. Cool undertones also have veins that appear a stronger blue than green under skin. Cool is the occasional undertone seen in people, and on the average about 4-5 out of every 20 people sampled will be cool temperature.

Neutral dominant undertones don't visually exhibit either olive, yellow, or ruddy (pink) complexions because they are characterized by equal amounts of both warm and cool pigmentation, such as yellow and pink. Some artists refer to this neutrality as a grayed undertone which is actually the second most common undertone seen in people, and quite often they can have a purplish green or even a light gray cast to veins under skin.

Neutral undertones are not immediately visible to the eye, especially without using full spectrum lighting. In fact, neutral undertones are typically mistaken by makeup artists as being a cool dominance, especially if they are using incorrect lighting. It's also a very common default if the artist hasn't trained to identify characteristics of the neutral zone apart from warm and cool.

### **Surface Tones:**

Skin surface tone (or top tone) variegations are often mistaken by beginning or novice artists as the undertone, and because they have not been trained to look beneath to the elements of pigmentation. Hyper-circulation interference (blood supply networked closer to the skin's surface) skin discolorations, and hyper-pigmentation issues can draw the eye away from the collective view of the skin's undertone. For instance, ruddy cheeks are not an indication of being a cool undertone, it can be caused either by hyper-circulation in that area, or a reaction to a skin irritant (such as flushing from cold weather) that is causing discoloration on the cheeks.

Surface tone is used as an indicator of the percentage of pigment saturation, or how light or dark the skin appears to the eye. Once you've identified the undertone temperature of skin, then you can evaluate the saturation of color in the surface tone to select the correct foundation products for a match. Professional foundation products used in media makeup will also have a temperature and value to them, and if the undertone is incorrectly identified and the wrong product used (such as a warm foundation on cool skin) then it will flare on skin as a color skew with a line of discolored demarcation. Incorrect value matches will have a line of demarcation that will contrast with skin as looking too light or too dark.

## **Lighting Differences in Reading Skin Components:**

Many artists commonly do their makeup work under ambient (available) lighting in their setting, which in many cases is incandescent or fluorescent based. The problem with these is that they emit light waves whose temperatures clarify towards a specific part of the light spectrum.

For instance: incandescent bulbs emit warm ray lighting, and it only allows red, orange, and yellow colors to be prominently visible to the eye. This is because it cancels out blue, green, and violets in the white light spectrum, while it further softens or mutes all visible tones on skin. Warm light makes it harder to see any neutral or cool projections in skin because of the strong muting qualities of warm light. Therefore, any warm characteristics in skin will be most prominent and any cool or neutral tones will be grayed out from visibility.

Fluorescent is cool lighting so it allows blue, green, and violet casts to be prominently visible. But because it cancels out the red, orange, and yellow in the white light spectrum it can also cast a hard grayish tone on skin. In this kind of light any cool characteristics in skin, no matter how small they might be, will be magnified and warm tones will be canceled out entirely.

Because of the coldness strength of this light, it makes it virtually impossible to see neutral dominance in skin because neutral characteristics are most often very subtle. It takes a good trained eye to distinguish neutral apart from warm and cool, especially since neutral dominance is an influx of both warm and cool, so using this kind of light is the greatest disadvantage to an artist.

Full Spectrum or daylight rated lighting is the closest rendering to sunlight. It incorporates both the warm and cool light rays, which make up the full white light spectrum, and allows for better clarity in seeing not only warm or cool dominance, but any neutral characteristics in skin will come forward more easily. The power (wattage) of light is also very important for good strength in illumination so you want to be sure that you use a minimum of 150 watts.

## **Reading Temperature:**

Most artists can match value without difficulty, but it is determining temperature that gives them more of a challenge, especially if the dominant undertone is not readily visible upon first examination. This is often the case with neutral and cool undertones, and it bears repeating here that without a full spectrum light spill to bring it up to the eye many artists will not be able to read them correctly through their natural color skew perceptions.

Novice artists must learn how to look beneath the skin's surface for a patterning that is consistent in the characteristics of one of the three temperatures. This begins by first examining the inside of the client's arm. This area gets the least amount of sun exposure, and will give a cleaner look and starting point at the percentage of underlying pigmentation as well as the vein color. Take mental notes of what stands out to the eye when traveling this view upward onto the chest, then up the neck, and finally onto the face area. What should be visually apparent along this path is either an overall dominance emerging of warm strength indicators (such as yellow, golden, sallow, etc.) or cool strength indicators (such as ruddy, bluish, etc.) along with a corresponding vein color.

If there is a clear absence of either warm or cool dominant indicators during this examination then it is a strong hint this might be a neutral undertone. Go back and look again at the underlying veins for clues, and if you don't see strong indications of green or bluish type veins, then it is another telltale sign of a neutral dominance. In any case, you are looking for confirmation of an undertone through two things, vein color influence and temperature specific dominant indicators.

There are a few other little tricks to use, such as the toner color test, but artists need to train their eye visually first, and under proper lighting, to be able to isolate temperature first. Then bring in the toner test, if necessary, to confirm their findings.

### **Reading Value:**

Once temperature has been identified then value can be determined by using the proper undertone based product to do test patches. It won't do any good to match value until you have identified temperature first, as you will have a color skew obstruction that will throw off the eye's complete focus on revealing accurate value.

The correct value is achieved when the foundation product blends imperceptibly into the jaw/neckline without any visible line of demarcation from the application. If you have a good (color theory) gray scale trained eye then this will be fairly quick and easy to do, especially if you need to do custom blending for an exact match. Many artists will need to resort to doing stripe testing on the jaw line to determine value. By laying down two or three values of base side by side, and that are half steps apart in the same visual percentage of pigment as skin's surface tone, the artist can do a more refined read that will result in an exact match, or custom blending to that end.

### **Summary:**

Makeup always begins with the correct lighting, and that should always be full spectrum. Without it, you will be at a greater disadvantage in reading accurate temperature and value in skin tones. These diagnostic skills are important for foundation products to match skin properly, and this is especially crucial for HDTV work. Polished color theory skills result in a clean looking complexion so that color palettes will compliment and bring features forward effectively.

If you have a difficult time analyzing skin for warm or cool temperatures because the dominance seems to be hidden, remember that neutral is a safe "default" read in this instance for camera work. This is because the camera will pull yellow or red from a face as a flare or reflection in the image if the skin is incorrectly matched in these temperatures.

Value that is not matched correctly will show up as a line of demarcation after blending if the value of the foundation product is darker than skin's surface tone. It will show up as a "halo" effect on skin if it is too light. Matching value is going to be compromised if temperature is incorrectly identified, so it is important that you refine these skills under a good source of full spectrum lighting. Your working knowledge in applying this gateway of color theory professionally is the essential underpinning that supports your fundamental skill set for any professional makeup application you do.