# Optimal Brush Settings

Here are the best settings to use for the brush:

- Before painting, go to Preferences/Cursors and select "**full size brush tip**" and "**show cross hair in brush tip**". This will cause the brush cursor to show you the brush accurately, but conservatively (when set to "normal size", a soft brush will paint well outside the circle and may result in painting in unintended areas).
- **Round brush**. Most likely you already have a round brush, but if not, click on the brush presets and click one of the first few circles.
- **High opacity (typically 100%)**. This allows you to build up as much paint as you need with a continuous brush stroke.
- **Low flow (typically 1-10%)**. This allows you to paint in a controlled manner.
- **Low hardness** (typically 25-50%, but the whole range can be useful). A completely soft brush (0%) can create some lag in the brush and makes it hard to paint with control near edges. On the flip side, a hard brush (100%) will make the edges of brush strokes obvious. A hard brush can be useful when working on small details.
- Activate "**always use pressure for opacity**" (the icon just right of opacity). This allows you to paint with more control when using a Wacom tablet and pen. Turning this option on will activate "transfer" in the brush pallet and set opacity control to "pen pressure".
- **Set spacing to 10%** (this can be found in the brush pallet under "brush tip shape"). Setting this to a low value will cause significant brush lag, setting it to 0 will cause excess paint at the ends when painting back and forth, and setting it too large will create circular patterns that may cause artifacts.
- **Normal blend mode**. Alternatively, soft light and overlay blend mode can be used with black and white paint to help nudge grey pixels towards black or white (I prefer to use the dodge and burn tools to do this instead).
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The rest of the brush options (other than spacing and the options activated when setting "always use pressure for opacity") can be turned off and ignored. The default settings in Photoshop activate "smoothing", but I have never found this to be beneficial and prefer to turn off unused settings to keep the brush as responsive as possible.

The other options at the top of Photoshop should also be skipped. The airbrush will cause excess build-up in areas where you are going slow to be careful or thinking (if you want more paint, increase flow instead). The option to "always use pressure for size" creates unpredictable results. It is better to change size with the bracket keys: [ and ]. That way the cursor will show you an accurate prediction of where the brush will paint.

If you're curious about the other options in the brush panel, here's a quick overview of what they do:

- Shape dynamics:  Allows variable size, roundness, and angle.
- Scattering:  Causes random placement (ie, the brush doesn't paint at the center).  This is useful for painting things like grass or hair.
- Texture:  Adds a texture to the brush.
- Dual Brush:  Adds a texture based on a second brush.
- Color Dynamics:  Allows variability in the brush color.  The "Per tip" option designates where the variation occurs within a brush stroke or between strokes (such as a rainbow colored line vs slightly different colors for individual blades of painted grass).
- Transfer: Control opacity, flow, and a few other things.  Most useful for setting how the brush responds to the pressure with a Wacom tablet.
- Brush Pose:  Let's you manually override various inputs from a Wacom tablet (for example, to ignore tilting of the pen).
- Noise: Adds some noise to the brush to help avoid banding on the soft-edge brush gradient.
- Wet Edges:  Makes the edges of the brush brighter to simulate the look of a watercolor brush.
- Build-up: This is the airbrush tool.  Turning it on will cause continuous flow, even when you are not moving the brush.
- Smoothing: This is meant to help create more natural curved lines.  Personally, I don't see much of an affect with it on or off.
- Protect Texture: Use a fixed pattern and scale for texture on multiple brushes.  Useful for simulating the look of painting on canvas.
- *[Note for all the above that "jitter" basically means to make something a bit random.]*