

Human Shaders - Troubleshooting

Troubleshooting



Start Here

Open:

Tools > STL Dynamics > Human Shaders Studio > Diagnostics

Run Validation before debugging individual shader settings.

Diagnostics checks:

- Required shaders.
- Active render pipeline.
- Human Shader materials.
- Normal-map texture types.
- Linear data-map import settings.
- Skin visibility profiles.
- Runtime region IDs.

Profile Inspector Has No Apply / Load Material Button

This is intentional in the current editor flow. Skin, Hair, Eye, Tongue, Teeth, and Clothing profile assets are reusable settings containers; material setup and editor-side profile application are centralized in Human Shaders Studio.

Select the profile asset and click:

Open Human Shaders Studio

The Studio opens to Materials, selects the matching shader family, and preloads the selected profile into Optional Profile. Use the Studio to convert or apply the profile to Human Shader materials.

Material is Pink / Shader Missing

Confirm the material uses one of these shaders:

```
STL Dynamics/Human/Skin
STL Dynamics/Human/Hair
STL Dynamics/Human/Eye
STL Dynamics/Human/Tongue
STL Dynamics/Human/Teeth
STL Dynamics/Human/Clothing
```

Also confirm the project is running URP.

Run Diagnostics. Missing required shaders are reported as errors.

Converted Character Looks Wrong

The Studio creates new Human Shader materials and copies compatible source values where possible, but different character pipelines encode maps differently.

Check:

1. Base/albedo texture.
2. Normal-map import type.
3. Roughness versus smoothness convention.
4. Packed data-map channel layout.
5. sRGB on/off state.
6. Alpha / opacity map.
7. Material surface mode.

Do not assume a source smoothness map can be used directly as roughness without inversion.

Packed Map Looks Too Bright or Too Dark

Packed Human Shader maps are numeric data, not color.

Confirm:

```
sRGB = Disabled
```

The built-in Texture Packing workspace sets this automatically for generated packed maps.

Normal Map Looks Flat or Incorrect

Confirm the texture importer uses:

```
Texture Type = Normal Map
```

Diagnostics checks Human Shader normal slots and reports incorrect imports.

Hair Has Hard / Bad Alpha Edges

Review:

- Strand Opacity texture.
- Alpha Density.
- Alpha Bias.
- Alpha Contrast.
- Coverage Threshold.
- Hair Surface Mode.
- Coverage Mode.

Try the three cutout coverage modes:

```
Hard Cutout  
Alpha To Coverage  
Dithered
```

If true alpha blending is needed, try Transparent mode.

Remember that transparent hair uses different depth/write behavior than cutout hair.

Hair Flow Map Has No Effect

The flow feature requires both:

- A Flow Map assigned.
- Flow Strength greater than approximately zero.

After changing these through code, call:

```
HumanHairMaterialUtility.Synchronize(material);
```

Eye Looks Flat

Check:

- Eye Mask channels.
- Iris Depth.
- Iris Concavity.
- Cornea enabled.
- Cornea IOR.
- Virtual Cornea Bulge.
- Reflection Probe Strength.
- Wet / Tear Level.

A reflection probe or useful scene reflections can materially improve the cornea response.

Teeth Look Like Plastic

Start by adjusting:

- Dentin roughness.

- Enamel roughness.
- Enamel thickness.
- Enamel density.
- Moisture.
- Wet roughness.
- Reflection probe strength.

Use transmission and opalescence for the incisal edge rather than solving everything with high specular strength.

Tongue Looks Dry

Check:

- Saliva Film enabled.
- Wet / Saliva Level.
- Wet Roughness.
- Wet Highlight Boost.
- Reflection Probe Strength.
- Saliva IOR.

Also verify that the Tongue Map's saliva-pooling channel is authored correctly.

Clothing Looks Like Plastic

Choose the closest Clothing Material Preset first:

```
Woven
Knit
Denim
Satin / Silk
Velvet
Leather
Synthetic
```

Then tune:

- Roughness.
- Fiber sheen.
- Anisotropy.
- Fiber direction.
- Detail normal.
- Clear coat.
- Transmission.

Do not use strong clear coat on fabric types that should remain fibrous and matte.

Runtime Material Feature Does Not Activate

If you changed feature properties from code, the material may need keyword/render-state synchronization.

Call the matching utility:

```
HumanSkinMaterialUtility.Synchronize(material);  
HumanHairMaterialUtility.Synchronize(material);  
HumanEyeMaterialUtility.Synchronize(material);  
HumanTongueMaterialUtility.Synchronize(material);  
HumanTeethMaterialUtility.Synchronize(material);  
HumanClothingMaterialUtility.Synchronize(material);
```

Skin Visibility Does Nothing

Check:

1. The skin material uses [STL Dynamics/Human/Skin](#).
2. The [HumanSkinVisibilityController](#) is enabled.
3. The correct renderer is assigned or discovered.
4. The painted profile is registered / requested.
5. The painted profile belongs to the same mesh it was authored against.
6. Edit-mode preview is enabled if testing outside Play Mode.
7. The visibility requester points to the correct controller.

Click Refresh Visibility in the Studio after changing setup.

Painted Region Hides the Wrong Surface

Current geometry paint profiles are mesh-specific.

If the source mesh changed, was re-exported, or has a different vertex topology, repaint the profile for the new mesh.

Use Refresh Posed Surface in the painter when the visible pose/surface cache needs updating.

Painting Bleeds Across Shared UV Areas

Use the current Geometry Paint Profile workflow.

The geometry painter follows connected surface topology and does not rely solely on shared UV coordinates.

Diagnostics warns when a profile still uses a legacy UV visibility mask.

Hide Zone Does Not Work

Confirm:

- Zone Hide Enabled is on.
- It targets/registers with the correct controller.
- The zone overlaps the rendered skin.
- The controller has not exceeded its zone limits.
- The controller is active.

Limits:

32 zones per controller
128 custom convex planes per controller

Custom Convex Zone Will Not Bake

A custom zone mesh must be:

- Closed.
- Convex.
- Manifold.
- Readable during baking.

If the Inspector reports a Read/Write problem, enable Read/Write on the custom mesh and rebuild the convex planes.

If the desired volume is concave, split it into several closed convex zones.

Removing One Garment Reveals Skin Needed by Another

Use [HumanSkinVisibilitySet](#) with [HumanSkinVisibilityRequester](#), or use the token API correctly.

The controller's runtime visibility requests are reference counted.

Correct manual pattern:

```
int token = controller.ApplyVisibilitySet(set);  
  
// Later:  
controller.RemoveVisibilityRequest(token);
```

Do not manually force a shared profile visible when other garments may still be requesting it.

Duplicate Visibility Region IDs

Duplicating a [HumanSkinPaintProfile](#) asset can result in profiles sharing a runtime ID.

Run Diagnostics.

If duplicate IDs are reported, regenerate the ID on one profile before using string-based lookup.

Direct asset-reference lookup is unaffected by the string-ID ambiguity.

Shadows Show Speckles, Leaks, or Harsh Terminators

Human Shaders exposes shader-specific shadow controls on supported materials, including combinations of:

- Shadow Strength
- Penumbra Smoothing
- Speckle / Leak Cleanup
- Terminator Stabilization
- Receiver Offset

- Diffuse Penumbra Fill
- SSS Penumbra Fill

Tune conservatively. Large offsets or cleanup values can solve one lighting angle while creating artifacts at another.

Test:

- Directional light.
- Punctual lights.
- Close-up face.
- Grazing light.
- Different shadow resolutions.

LerpWhiteTo Shader Compile Error on Older URP

Some older Unity/URP versions can report an error similar to:

```
undeclared identifier 'LerpWhiteTo'  
.../ShaderLibrary/Shadows.hlsl
```

This is associated with the URP shadow include path in affected package versions.

For a compatibility-safe custom shadow pass, `CommonMaterial.hlsl` should be available before `Shadows.hlsl`:

```
#include "Packages/com.unity.render-pipelines.universal/ShaderLibrary/Core.hlsl"  
#include "Packages/com.unity.render-pipelines.core/ShaderLibrary/CommonMaterial.hlsl"  
#include "Packages/com.unity.render-pipelines.universal/ShaderLibrary/Shadows.hlsl"
```

If you are the end user of a packaged release, first ensure you are using the latest Human Shaders package version and a supported Unity/URP patch.

Diagnostics Reports "Active Render Pipeline Is Not URP"

Human Shaders is a URP shader toolkit.

Assign a Universal Render Pipeline Asset in your project graphics/quality configuration before using the package.

Everything Works But Keywords Look Stale

Select the Human Shader material(s), open:

Human Shaders Studio > Diagnostics

Then click:

Synchronize Selected Materials

This refreshes keyword and render-state configuration without replacing textures or authoring values.