



Tree Health Considerations For Rope Swings

We thank our arborist friend and colleague, Edd Clarke for sharing his knowledge on this topic and helping us become more confident in understanding tree health.

Of course, everyone knows that when looking to site a rope swing in a tree you want the tree to be in good general health, but how do you know how healthy a tree is? And how do you rig a rope swing so it has minimal to no damage on the tree both for the safety of future rope swings and for the tree's health.

We're going to take you through a basic tree health assessment. However, this is not going to tell you the exact safety of a tree, so if you have any concerns, please contact your local arborist and get a tree-liability survey done.

Overview:

When looking for the perfect tree swing site, one thing to look for is the gradient. Ideally you want a little bit of a slope to get a nice swing without catching your feet on the ground and it makes it easier to get on and off too. You also want a limb that's accessible to get a rope over and that will give space to swing well from.

Visual Safety Check:

Once you've found the tree you want to put a swing in, you'll want to do a basic visual check of the tree and consider aspects of the tree form and structure.

Start at the top and work your way down. Does the crown look healthy, is there any substantial dead wood up there, any snapped out limbs? What we don't want is anything up there that can fall down on the children as they're swinging. Have an extra good look at the limbs above the one you intend to attach the rope swing to.

Work your way down the tree, looking at the trunk for signs of fungus and decay and V shaped unions. We want U shaped unions. Look out for large cavities, these can also be a sign of weakness.

Then follow the tree down and look at the trunk and the base keeping an eye out for fungus attached to the tree or lines of fungus at the base of the tree, moving leaf litter to get a good look. Then look at the root plate of the tree looking for signs of heave.

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If you return to the same site throughout the seasons, a windy day will help you assess the overall health of a tree - if you see **movement in the bottom 4ft of a tree** then you can consider this an unsafe tree. Even on a calm day, you can look for tracks of movement at the base of a tree - does the earth look like it's moved recently around the roots? On a windy day you can sometimes see the ground around the roots moving as if it is breathing. These would all indicate an unsafe tree.

You can also listen to the tree for creaking, this is usually an indication of rubbing that can mean there's infection. Look out for bark cracking or bulges as these can also indicate potential weaknesses in the tree.

Cavities, Inclusions and Unions:

Aspect Ratio:

It's likely you'll site your swing on a primary branch - one that comes directly off the trunk of the tree. It's important to note that this should be about half or a third of the width of the main trunk. The smaller the branch is in comparison to the trunk, the stronger the union is.

Another tree form to look out for is **cavities and inclusions**. Whilst cavities in trees provide habitat for wildlife, they can again be a weakness in tree structure so need to be visually looked for and considered when siting a rope swing or other tree related activities. It is important to note that not all cavities will be visible from the ground so there is a possibility of cavities out of sight. Inclusions - where two stems or branches have fused and there is bark included inside of the union of these two - this will also give rise to a weaker area than just wood. This is why it is common where you have twin stems growing beside each other that have fused at the base, that they can split apart.

In terms of other considerations of form and structure, it is generally understood that branches that angle from the main trunk in a 'U' union are significantly safer than those branches that come from the main trunk in a 'V' union.

Fungi Consideration:

If you see **fungus or signs of decay** on the tree, this indicates that the tree is potentially dangerous. The dying process of a tree is long, for some species 100s of years, so it doesn't mean that if you see fungus growing on a tree it is dangerous to be around it, but it does indicate that it is not in its prime, so this should be considered when looking at whether a tree is suitable for siting a rope swing.

There are certain funguses that do indicate the tree is in a state of failure. Here are the most notable in the UK:

Ganaderma applanatum - big brackets growing on the side of the tree and a white rot fungus.

There is no hard and fast rule, but we wouldn't choose to put a swing in a tree with this fungus growing on it.

Honey Fungus - eats the tree from the inside. This isn't the most obvious from the outside of the tree, but if you peel back the bark on an area of the tree that's not living, you'll see black lacey bits underneath. The mushrooms aren't often there for very long.

Kretzschmaria deusta - Brittle Tinder Fungus consumes the lignin and the cellulose of trees which can make them very brittle. It can be very elusive and so requires extra vigilance.

Fomes Fomentarius - Hoof Fungus is another white rot bracket.

Inonotus hispidus - Shaggy Bracket Fungus is quite often found higher up in the crown in Ash Trees. It is a yellow fungus that can reduce the structural integrity of a tree quickly so it's worth looking up for this bright yellow bracket in the crown of a tree.

As a general rule, if you take a stick and respectfully hit around the base of the tree and it sounds hollow, don't put a swing in it.

Hazard Beams

This is when there are banana splits that can travel through the wood. Trees use lignin, a strong but brittle material, to deal with compaction forces and cellulose, a flexible but weaker material, to deal with flexion. The tree produces these substances relative to the forces it experiences over its lifetime. If for some reason it experiences opposite forces it can cause torsional fractures. These appear as big banana splits through the wood and can occur if a tree or building was moved that was previously sheltering the tree from wind. It's unlikely but swings could contribute to this by putting opposite rotation onto the branch.

Lever Arm

This is the length of the intended branch chosen for the swing in relation to the tree. If the branch seems excessively long it is already supporting a lot of weight at the union. This can happen when a branch goes out a long way and then suddenly makes a right angle turn upwards to find the light. This would not be suitable for a tree swing.

Taking Care of the Tree:

We do however want to highlight the potential damage (and therefore weakening over time) that rope swings can cause. If a swing is attached to a branch in such a way that the rope moves around a tree branch whilst under load, then over time this friction will cut into the branch's bark. If it wears through the cambium layer (inner bark) then this effectively kills a portion of the branch. This of course weakens it for future use, and doesn't feel like a good way to caretake the tree that is gifting such joy! So, the best case scenario is that there is an attachment point that does not move around the branch whilst the swing is under load. There are various ways to do this, but we demonstrate this here with a climbing sling being used around the branch and the rope swing being suspended from this sling. We also recommend taking any rope down the same day it was put up which limits the use and wear on that particular point. Note: any play structure left up for 7 days would come under stringent play equipment legislation.

Links

- [Rope Swings - Putting up and Retrieving](#)
- [Ropes and Rope Care](#)
- [Rope Challenges](#)

Tags

- [Tree Health](#), [Rope Swings](#), [Tree Health Assessment](#)



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