

For medical mysteries, look deeper!

April – July 2021



Dr. Hassell with his wife Anna and son Tor, clearly very happy after reaching the summit of Dog Mountain in southwest Washington, in preparation for their Mt. St. Helens climb in late July. The spectacular Columbia River Gorge is in the background.

Mike's rare case of heart failure and its unusual resolution; from hospice to health!

Advanced heart failure is, unfortunately, a common condition that may require intensive medical procedures, and can be fatal. But Mike's case had a very good ending, thanks to thorough medical investigation and a bit of outside-the-box thinking.

Mike was a vigorous engineer who at 76 years old still worked full time as a department head as well as looking after his hobby farm. He had always been an active outdoorsman, lean and unusually fit; both he and his wife were healthy, ate well, and rarely ate out.

However, he began noticing an unusual and increasing shortness of breath, which finally became so severe that he was forced to retire 2 years before he had planned, and was even unable to do his typical daily activities. Looking back today, he says he suspects the symptoms had probably been creeping into his life for a year or more. For example, he had stopped hiking at higher altitudes, but attributed his fatigue and shortness of breath to "just getting older."

Mike's deterioration was rapid. Intensive pulmonology (lung) and cardiology (heart) investigations were pursued to try to find the cause. It became apparent that his symptoms were due to extremely poor heart-pumping function, with his echocardiogram showing ejection fraction down to 20%. (Normal ejection fraction is 50-70%.) The extensive workup, including a coronary angiogram to determine the state of his heart arteries, failed to reveal the cause of his heart weakness.

The outlook became so grim that he was not expected to live; home hospice became involved, and he required portable oxygen to help him move around more easily.

Heart failure medications improved his quality of life, but the question of "why does this man have heart failure?" continued to nag. Exhaustive work-ups had eliminated the usual suspects, so we started searching for all the **unusual** causes of heart failure that are not part of a conventional evaluation. Of the many tests ordered, one unexpected result stood out: he had a very low blood level of thiamine (vitamin B1).

Thiamine and heart failure

The link between thiamine (vitamin B1) deficiency and heart failure was not discovered until we began to process thiamine-rich brown rice into nutrient-depleted white rice. The first reports of the association between thiamine and the heart failure syndrome beri-beri were published in Japanese medical literature in 1911.¹ (For more reasons to avoid white rice, see page 66 of *Good Food, Great Medicine*, 4th edition.)

What happened when Mike took thiamine?

The next step was to simply give a thiamine supplement to Mike and see what happened. Within a month of twice-daily doses of 25 mg (as well as adding whole foods like fresh cooked liver and Brewer's yeast to his diet) he began feeling stronger; within 2 months he was able to walk the ¼ mile (with significant elevation) to the stream on his farm, something he hadn't been able to do for more than a year! He felt even better after he was able to stop some of his medications; subsequent serial echocardiograms showed an ejection fraction of 50%, which is low normal! All symptoms and signs of heart failure resolved, and he was able to resume a normal life.

Why would Mike, with no evident nutrient deficiency or malabsorption, and whose diet is plentiful in thiamine, have this deficiency? We don't know. We can only assume he has a unique malabsorption syndrome. But although that final piece of this puzzle remains, we are delighted that Mike is back to tending his vegetable garden, mowing the grass, and enjoying an active summer on his farm!

¹ Suzuki U., Shimamura T. (1911) "Active constituent of rice grits preventing bird polyneuritis". *Tokyo Kagaku Kaishi*. **32**: 4-7, 144-146, 335-358. doi:10.1246/nikkashi1880.32.4



The jar on the left has just been filled with the salted fresh cabbage after it has been kneaded; on the right is the same cabbage a minute later, after the cabbage has been packed down firmly. The salt has drawn out enough cabbage juice to create a layer of liquid on top, and now we're ready for step 4.

Simple Sauerkraut

If you aren't making your own sauerkraut, you're passing up one of the vegetable world's most valuable gifts to busy people. Cabbage + salt + time = sauerkraut. Don't like sauerkraut? Then use this recipe to make a refreshing batch of mildly pickled cabbage by stopping the fermentation process after a week; the longer the time, the more intense the taste. The only work involved is slicing a cabbage, and a tool called a mandolin makes the job almost effortless. Salt coaxes the juice out of the cabbage to make the brine, after which an eager team of skilled microorganisms go to work to bump up the probiotic activity. Meanwhile, you can just take a nap.

(Makes about 8 cups)

1 cabbage (about 2 lbs or 14 cups shredded), green/red/or combination of both
 1 tablespoon salt (I use Kosher)

(Clear ½-gallon jar with wide mouth and lid)

1. Slice cabbage in quarters through core, and then into ⅛ - ¼ -inch slices. (I use a mandolin for this, and leave in the core for a better grip. Watch your knuckles!) For a 2-pound cabbage you'll end up with *about* 14 cups of sliced. (Discard core and save an outer leaf or two to use in Step 4.)
2. Place in a large bowl and sprinkle with salt. Mix salt thoroughly through cabbage and then leave it alone for at least 30 minutes. (This will give the salt a head start in drawing the juice out of the sliced cabbage, and will make the next step much easier and faster.)
3. The next step is to knead the cabbage (by hand seems to work best) for a few minutes, or until it's reduced by about half and has released the extra brine you need. Transfer cabbage by hand or with

tongs into a jar with a wide mouth, such as a half-gallon Mason jar. After every few handfuls, press the cabbage down firmly – your fist works well. You want it tightly packed, with about a ½-inch layer of brine on top; this seals off the cabbage and prevents mold and anything else from interrupting a healthy ferment. I have never had a problem, but. . .(See note below.)

4. Place a leaf or two of cabbage, folded to roughly fit the inside diameter of the jar, on top of the shredded cabbage, press down to submerge it in brine, and place something heavy on top to keep it submerged. (I use a half-pint mason jar half filled with water, placing it on the cabbage "lid" and pressing it down until all is submerged again.)
5. Place a lid or cover on the jar, and store at room temperature (a cool rather than warm spot) out of direct light. Check it every day to make sure there is a half-inch or so of brine on top; if not, push the bottle/weight down to encourage the cabbage to stay below the surface.
6. The sauerkraut is ready to eat in 1–2 weeks; I like it to taste mild enough to eat as I would a salad rather than a condiment. (For more traditional sauerkraut, ferment for 3–4 weeks and then taste to see if it suits you.) Keeps up to 12 months in the refrigerator.

Note:

- Take time to visit sauerkraut-friendly websites like makesauerkraut.com/fermentation-tips-tricks. Even if you are happy with my simple recipe using the most basic method, there is not enough space here to cover a fraction of the variations, information, advice, and opinions attached to a traditional food like this.
- Cabbages can vary enormously in weight and density. For a larger or smaller batch than the recipe here, remember to maintain the salt/cabbage ratio.
- Red cabbage or a mixture of red and green works well, and makes a beautifully colored sauerkraut.

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Speaking events and classes

7/21/2021 – Pacific University School of Physician Assistant Studies: Vitamins and Malabsorption Lecture

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*"Prove all things; hold fast that which is good."
 1 Thessalonians 5:21 (KJV)*