

## **Is it harmful to re-boil water?**

(Cantonese dialogue with English subtitles)

Woman A:           What's up?

Woman B:           Hey! I can't get a glass of room-temperature water!  
Why do you always re-boil the water?

Woman A:           It's because I am worried about heavy metals  
and contaminants in the water,  
so I re-boil it to remove impurities in the water.

Woman B:           Don't be silly, doing so won't remove heavy metals or  
impurities.  
Besides, I've heard that re-boiling water is not only useless  
but can also cause cancer.

Woman C:           The concern is that boiling water repeatedly  
may increase nitrite concentration.  
Since nitrite is carcinogenic,  
I no longer use temperature-controlled electric kettles at  
home.

Super:              Dr. FU Li Ki  
Waterworks Chemist, WSD

Dr. FU Li Ki:       Nitrite is common in the natural environment  
and can be found in water, food or soil.  
Also, if a building's internal plumbing system  
is properly installed and maintained,  
the concentrations of heavy metals in drinking water  
and their associated health risks remain exceptionally low.

The WSD has established standard for nitrite and heavy metals and maintains regular monitoring of their levels in drinking water.

According to past monitoring data, the levels of nitrite and heavy metals in drinking water have remained far below their respective standard values set out in the Hong Kong Drinking Water Standards.

Woman B: Does repeated boiling increase the levels of heavy metals and nitrite in water?

Dr. FU Li Ki: Let's analyze the re-boiled water. According to the test results,

Super:

	Drinking water ( $\mu\text{g/L}$ )	Drinking water after re-boiling 20 times ( $\mu\text{g/L}$ )	Standard value in Hong Kong Drinking Water Standards ( $\mu\text{g/L}$ )	Compliance
Nitrite	< 1	< 1	$\leq 3000$	✓
Cadmium	< 1	< 1	$\leq 3$	✓
Chromium	< 1	< 1	$\leq 50$	✓
Copper	< 3	3	$\leq 2000$	✓
Lead	< 1	< 1	$\leq 10$	✓
Nickel	< 1	2	$\leq 70$	✓

Dr. FU Li Ki: the nitrite and heavy metal levels in drinking water are far below the standard values set out in the Hong Kong Drinking Water Standards. Even after re-boiling water 20 times in an electric kettle, there is still no significant change in their levels in drinking water. The drinking water is therefore safe for consumption after re-boiling.

Woman C:            You girls should not believe those online rumours  
                         without fact-checking anymore.  
                         Got it?

Woman A and B:    Yes, we got it.

Dr. FU Li Ki:        Please remember to check your kettles.  
                         Using substandard, worn-out, or unclean kettles  
                         may also affect the quality of drinking water.

Super:                Water Supplies Department logo

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