

Appendices

Table 1

Study	Sample Population	Study Design	Exposure	Outcome 1*	Outcome 2, etc.*	Comments
Kovács, et al., 2022	- media		low deuterium (40 and 80 ppm) and high deuterium (300 ppm) media compared to natural deuterium level (150 ppm)	expression of 236 cancer-related and 536 kinase genes	97.3% of them were upregulated at 300 ppm	showed that blocking the increase of intracellular deuterium concentration prevents the express of cancer-related genes
	- mice exposed to chemical carcinogen			deuterium-depleted drinking water (30 ppm)		prevented tumor development
	- human - 204 cancer patients that had been treated previously with disease currently in remission	- retrospective study	consumption of DDW	- 77.9% did not relapse during 803 years collective follow-up time - 8 out of 11 deaths occurred several years after stopping DDW consumption	- The proposed mechanism is preventing the D/H ratios (through drinking deuterium-depleted water) to reach the threshold necessary for cell division; suggesting that this could be a solution to reducing the relapse rate of cancer patients and/or decreasing the cancer incidence in healthy people	- regularly drinking DDW could prevent cancer recurrence - could decrease the relapse rate of cancer patients and/or reduce cancer incidence in healthy people
Kovács, et al., 2011	- human - prostate cancer	double-blind, randomized, 4-month long, phase II, placebo	replacement of daily water intake with DDW (85 ppm) versus	- 1 patient in the placebo group achieved partial	- net decrease in prostate size treated versus control	showed deuterium depletion may delay the progression of prostate cancer

		controlled, clinical trial	normal water (150 ppm)	response (p = 0.046) - 11 patients no change -13 patients in placebo group had non-significant difference	group (p = 0.0019)	
Krempels, et al., 2008	- human - 4 lung cancer patients who have brain metastasis	case-based, retrospective evaluation	DDW consumption	- prolonged survival time	- 2 patients showed complete response - 1 patient detected partial response - 1 case the tumor growth was halted (no change)	showed deuterium depletion in addition to conventional treatments, improves mean survival in lung cancer
Somlyai, et al., 2023	- human - glioblastoma multiforme patients	preliminary study	daily fluid intake was replaced with DDW of 1.5-2 L per day	- improvement in the median survival time - survival times were prolonged compared to the prospective clinical data		showed deuterium depletion in combination with conventional therapy, improved median survival time
Krempels, et al., 2013	- human - 232 breast cancer patients - 91 days	retrospective study	normal daily water intake (150 ppm) was replaced with DDW (65-105 ppm)	- patients with early stage breast cancer (n=158) had a median survival time of 217 months - patients with advanced disease (n=74) had 52 months		showed deuterium depleted water in combination with or as an extension of conventional therapies, prolonged median survival time in certain subgroups of breast cancer patients

				- MST of 24.4 years in the subgroup of 53 patients who received DDW at least twice		
Somlyai, et al., 2022	- in vivo mouse models - one model 4T1 cell line with high metastatic capacity to lung		- deuterium depleted food additive (DDyolk)	- after 3 weeks of treatment with DDW and/or DDyolk, in all treated groups, the tumor volume in the lungs was smaller		showed deuterium depleted water and/or deuterium depleted yolk led to smaller tumor volume
	- in vivo mouse models - mice transplanted with MCF-7 breast cancer cell line			- tumor growth	- survival	showed the anticancer effect of deuterium depleted water was enhanced by food containing deuterium-depletion
Cong, et al., 2009	- human lung carcinoma cell line A549 - and human embryonic lung fibroblasts HLF-1		DDW	- cellular growth inhibition rates - inhibited the proliferation of A549 cells at a specific time point	- cells demonstrated the morphological changes of apoptosis	shown to inhibit lung tumor growth in vivo as well as inhibited the proliferation of A549 cell lines with an accompanying increase in apoptosis
	- tumor transplantation model by injecting H460 tumor cells into subcutaneous tissue of BALB/c mice		DDW for 60 days	- tumor inhibition rate was 30%	- tumor weight significantly decreased	
Strekalova, et al., 2014	- human - depression	- epidemiological study - correlation analysis	deuterium content of tap water	significant correlation (p=0.0016) between deuterium content of tap water		showed a significant positive correlation between geographical distribution of the deuterium content of natural tap water in the US population and rates of depression.

				and rates of depression		
Molnár, et al., 2021	- streptozotocin (STZ) – induced diabetic rat model - diabetes		subnormal D ₂ O concentration (in a range of 25-150 ppm)	glucose metabolism - reduced serum levels of glucose, - fructose, - amines, and - HbA1c in a dose dependent manner		confirmed that deuterium depletion, in a dose-dependent manner, enhanced the effect of insulin on Glucose Transporter type 4 (GLUT4) translocation.
Somlyai et al., 2020	- human - 30 volunteers - pre- or manifest diabetes	- clinical prospective study/ preliminary study - 90 days	1.5 L of water with reduced deuterium content (104 ppm instead of 145 ppm)	- fasted insulin and glucose decreased		with pre- or manifest diabetes, DDW (104 ppm) significantly reduced the fasting glucose level and decreased insulin resistance
Mladin et al., 2014	- normal Wistar rats - long term memory		chronic administration of DDW versus distilled water	- spatial working memory and locomotor activity or both short-term and long-term spatial memory		DDW significantly decreased the number of reference memory errors, speculating that DDW may stimulate long-term memory
Ávila et al., 2012	- <i>Caenorhabditis elegans</i> (<i>C. elegans</i>) - anti-aging		DDW (90 ppm)	- restored life-span		DDW (90 ppm) reversed manganese (Mn)-induced lifespan decrease, restoring lifespan
Boros et al., 2024	- human - sports performance	- medical hypothesis - case report / sample cohort	nutritional ketosis	- successful summiting of Mount Everest without supplemental oxygen		after six failed attempts by the same high altitude professional mountain climber using carbohydrate-based nutrition (glycogenic), the athlete in deuterium depleting nutritional ketosis was finally able to summit Mount Everest without supplemental oxygen

<p>Gyöngyi et al., 2013</p>	<p>- human - 129 patients - small cell and nonsmall cell lung cancers</p>	<p>clinical study</p>	<p>DDW</p>	<p>- median survival time</p>		<p>deuterium-depleted drinking water in addition to conventional chemotherapy and radiotherapy, median survival time was 25.9 months in males and 74.1 month in female patients; this was statically significant ($p < 0.05$).²⁵ For women with tumors overexpressing cancer-related genes, those who drank deuterium-depleted water had a median survival time that was 2 – 4 times longer than what is typically seen in lung cancer patients.</p>
	<p>- mouse lung</p>		<p>DDW</p>	<p>- expression of Kras, Bcl2, and Myc genes</p>		<p>DDW attenuates 7,12-dimethylbenz(a)anthracene (DMBA) induced expression of Bcl2, Kras, and Myc in females</p>
<p>Boros, et al, 2020</p>	<p>- human - pancreatic adenocarcinoma patients</p>		<p>Conventional chemotherapy + DDW (85ppm), decreased to 65ppm and 45 ppm for each 1 -3 months treatment period</p>	<p>- median survival time (MST)</p>		<p>“Eighty-six (36 male and 50 female) pancreatic adenocarcinoma patients were treated with conventional chemotherapy and natural water (control, 30 patients) or 85 ppm DDW (56 patients), which was gradually decreased to preparations with 65 ppm and 45 ppm deuterium content for each 1 to 3 months treatment period. The mean survival time for patients consuming DDW treatment (n = 56) was 19.6 months in comparison with the 6.36 months’ MS achieved with chemotherapy alone (n = 30). There was a strong, statistically significant Pearson correlation ($r = 0.504$, $p < 0.001$) between survival time and length</p>

						and frequency of DDW treatment.” ²⁷
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