

## Research Article

# THE AUSTRALIAN NATIONAL HEALTH AND MEDICAL RESEARCH COUNCIL'S REVIEW INTO DR JOHN HOLT'S UHF TREATMENT – CRITICISM

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### ABSTRACT

In order to counter publicity and scepticism regarding Dr Holt's UHF treatment, the Federal Minister appointed the National Health and Medical Research Council to conduct a Review of the treatment. A bland result ensued, and neutralized support for the protocols that used radiotherapy or as a mono-therapy. However the Review contains appreciable deficiencies and discrepancies, making the expected and actual outcomes very questionable. Accordingly, with greater knowledge now, use of the treatment may still have a place for cancer and other treatments, and deserves closer examination.

**Conclusion:** UHF applied to patients with cancers with or without added radiotherapy, may be beneficial for many cancers.

**Index terms:** Cancer, UHF, NH&MRC Review, bias, Dr Holt.

### INTRODUCTION

Early in 1973, Dr John Holt of Western Australia (Radiotherapist) examined a "Tronado" machine being sold in Germany. It irradiated cancer patients with radio waves of 434 MHz UHF\* with up to 2,000 Watts of power. He noticed that, when a patient with stomach cancer was in the radiation field, the current drawn by the output stage of the machine was ~225 Watts yet, when Holt was in the machine, the power drawn was 195 Watts. Cancers seemed to be consuming power. This observation was developed further with a spectrum analyzer. \* Here, UHF = VHF = MT = Microwave therapy.

After empirical trials he, and an Associate Dr A Nelson, conducted a trial using the UHF as an adjuvant treatment prior to standard radiotherapy (RT) on Head and Neck cancers. This, and follow-up were published (Nelson & Holt, 1978, Holt & Nelson 1985). The results seemed gratifying, but the lack of a scientific explanation for the claimed effects was a barrier for acceptance by the profession. Nevertheless, treatments continued until Dr Nelson died and there was a dispute in the radiotherapy clinic, with Dr Holt leaving in about 1991 and applying the UHF alone as a solo practitioner. In 2003, there was a high profile presentation of him and his treatments in prime-time television. This caused the expected flurry of concern in some circles, such that the Federal Minister for Health and Aging requested the National Health and Medical Research Council (NH&MRC) to review Dr Holt's treatments. The completed Review (Shine 2005) was signed-off by Professor John Shine AO FAA on 12<sup>th</sup> September 2005.

The Review conclusion was disappointing, with only the treatment of head and neck cancer seeming to show a positive outcome. The general conclusion was that "UHF+RT . . . was inferior compared to conventional RT, with respect to cancer control or survival, for patients with breast cancer, lung cancer lymphoma or prostate cancer." However, for those who check, there are a number of disturbing features or discrepancies, which raise the issue of veracity and trust:

Trust forms the basis for advancement in science: experimental findings and conclusions must be trustworthy for new work and initiatives to build on them. Systematic deviations that are not explained by statistical variation or experimental design issues may erode trust, with the resultant deviations forming an ingrained bias.

### POINTS OF CONCERN:

- The Minister's instruction to the NH&MRC was ". . . undertake an assessment of the therapeutic effectiveness of microwave cancer therapy as practiced by Dr John Holt." Holt used UHF as a mono-therapy from 1991 until the Ministerial instruction (~2004). Yet that patient cohort had no relevant comparison or control group found to indicate whether the mono-therapy treatment was better/(worse?) than none ! Accordingly, the Review of this cohort was not based on a sound science-based study, and the Minister's instruction was **not followed**.
- Potentially relevant literature was searched-for; that collected was analyzed. Much in the Review Volume 1 was irrelevant (e.g. 434 MHz was not used). Assessment was strict; most given a "poor" ranking, including the Nelson & Holt papers, for reasons that are not always stated or clear:
- The critic for the Review commented upon the Nelson & Holt (1978)/Holt & Nelson (1985) papers with only 14 lines of standard text, noting "Poor methodological quality due to the study design and poor reporting of study methodology and results," with no specific examples or elaboration provided (theirs' being rather similar to the patient/control series established by the Review itself for its own assessments).

*"The study reported in various papers by Holt and Nelson was an historical comparison of several series of patients treated by different modalities including RT alone, RT under hyperbaric conditions and RT+MT. RT under hyperbaric conditions is excluded from this review."*

Some may consider such an exclusion an error; when assessing the value of a new and novel form of treatment in a preliminary report, one would like to see all data collected, not a selection. When graphs of the survival figures are examined, at one year, the crude survival for the Hyperbaric +RT group (57.5%), lies

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about midway between the survival for the VHF (UHF) + RT group (82%), and the VHF + Super voltage RT group (36.5%). Thereafter the percentages fall, showing some similarities, the

(Hyperbaric falling to a greater extent). The patterns provide some reassurance that the patient selections and behaviors were reasonably comparable.

**Treatment results published by Nelson & Holt 1978. (Head & neck cancer)**

UHF & RT	RT & Hyperbaric O <sub>2</sub>	RT
n=52 UHF x 2 - 3/week, 20 minutes + Average 46 Gy* over 8 weeks, (15-60 Gy)  Some truncated treatments, using gold implants	n=52 303 kPa O <sub>2</sub> pressure x7 fractions, x2/week + RT average 35 Gy* over 6 weeks (30-38.5 Gy)	n=52 RT Average 60 Gy* over 6 weeks (48-66 Gy)  *as rads in original
<b>Survivors at 3 years = 54%</b>	<b>Survivors at 3 years = 29%</b>	<b>Survivors at 3 years = 19%</b>

- Not made clear by the critic is that the RT doses for the different groups were **not the same**, showing RT sensitivities; for (RT+UHF), average dose =4600 rads, [46 Gy]; (Hyperbaric oxygen+RT) average dose =3500 rads [350 Gy]; RT alone, average dose =6000 rads [60 Gy], a mere ~30% higher dose, yet the survival % for the UHF&RT was still reported as superior. So, despite the RT doses decreasing RT to RT+UHF, the stated survival percentages at 1-3 years had RT+UHF>RT+HBO\*>RT. When the graphed figures are examined and the dosages considered, complicated statistical analysis of mixed RT doses is hardly necessary (or easy) to appreciate the differences. \* Hyperbaric oxygen
- The papers' authors added "a further 79 comparable (ENT) cases . . . against similar cases treated conventionally in the same period." "The threefold improvement in tumour regression and three-year survival is again seen." This drew criticism because the reference was to a 1985 letter to the Editor publication; the critic's opinion seeming to be that such data should be the subject of a new, full paper/presentation. This may ignore the realities of publishing in a "main-stream" medical journal when the treatment has no known scientific explanation. The Editor may accept an initial paper, but decline follow-up papers unless submitted in "Letter to the Editor" format. ". . . the lack of information provided regarding the selection of patients for MT or for RT & MT, the nature of the interventions, the definition and assessment of outcomes, statistical methods and the number of patients excluded from the analysis means poor quality evidence." Yet, by examination :-

**Criticisms:**

Criticism issue	Basic response	Comment
Selection of Patients	Holt 1977, Nelson & Holt (1978) ongoing	Described
Nature of Interventions	Ibid. RT & RT&UHF, also HBO*	Ongoing – as before
Definition/Outcomes	Ibid. Key outcome, Survival	Survival, extrapolated to 3 year ?
Statistical methods	Crude survival graphs	Statistical tests are hardly necessary
Patients excluded	One from each treatment arm (1978)	Mentioned

\* Hyperbaric oxygen

- The paper can be considered to be of a "Preliminary Communication" type because the survival assessments could not be completed fully within 3 years of treatment (within ~4 years of starting the treatment in Australia) and produced the Authors' comment "The results would justify a planned prospective trial." "The design of any trial should be to test the adjuvant effects to conventional therapy by 434 MHz radiation." (Being Radiotherapists in private practice, they may have not been in the position to construct such a trial.) The later Letter (Holt & Nelson 1985) is an extension of the former paper (1978).
- A trial was planned by Trotter (1996) for head and neck cancer, but did not proceed. "It was rejected following an opinion from statisticians that insufficient numbers would be accrued for a viable study." (Trotter 1997)
- It was then that a trial was commenced with rectal cancers (Trotter 1997), with Holt (1997) displeased by the choice having ". . . intimated that that to be of any value a trial had to be made using cancer for which X-ray therapy was usually appropriate." The result was a disappointment, with no real UHF benefit (Traill 2022a).

(But there was a reason for the disappointing study outcome – with rectal cancers' high proportion of cases having mutations of the APC gene, means that the cell's microtubules are unable to attach to the truncated APC molecules at the plasma membrane and complete the electrical circuit through the cell. UHF was inappropriate for that tumour (and any similar) – the outcome was as Holt predicted.) !

- The name of H. Fröhlich, a famous theoretical physicist who wrote about resonance in tissue, was never mentioned in Volumes 1 or 2.
- The Author (MAT) had made a submission yet, despite noting that it had been received, the substance of the submission (which contained reference to Fröhlich [1980] and had case reports) was never mentioned in Volumes 1 or 2, but also noted that MAT had been an "investigator" (also listed in another section).
- Discussion about the possible radio wave/heat actions on tissues was at an elementary level and possibly of low relevance, with a "resonance" and its probable associated biochemical effects (Traill 2022b) omitted. The latter may have been more relevant. The Review suggested that the "resonance" effect (seen on the frequency scanning images captured by Holt) was created by reflection from tissue planes. No reference was provided for this novel suggestion.

- The assessment by the reviewer was that the standard of the Nelson and Holt study was poor. Almost all the others of the literature examined were also rated as poor, the exception being Trotter et al. 1996, which found no statistical difference between the treatment arms – classed as Fair/poor.
- The Review Committee decided to examine six historical groups drawn from Dr Holt's RT&UHF practice (PROC) and the Sir Charles Gairdner Hospital pre-1991, and from Holt's UHF Microwave Therapy Centre's historical records post 1991, trying to match, over a similar time, the control groups' demographics before matching patients with the records of the *Western Australian Cancer Register*; a retrospective challenge:

Cancers	Treatments*	Accrual interval	Group number
a. Bladder	RT alone	1973 - 1992	N = 34
b. Bladder	RT +UHF	1974 - 1991	N = 12
<b>c. Bladder</b>	<b>UHF+GBA</b>	<b>1992 - 2005</b>	N = 18
d. Any invasive	RT+UHF	1980 - 1990	N = 56
<b>e. Any invasive</b>	<b>UHF+GBA</b>	<b>2001 - 2003</b>	N = 49
<b>f. Any – Best 10</b>	<b>UHF+GBA</b>	<b>1974 – 2003</b>	N = 10

\* Throughout, UHF, (unless stated otherwise), is given together with a "Glucose Blocking Agent; GBA," an integral part of the UHF protocol. This may be an oxidizing solution (disulphide) or Cyclophosphamide (which inhibits glucose transporters; recipient patients generally not specified.)

Such processing of historical data from divergent sites would raise serious doubts about the abilities required and achieved.

"Analysis was also restricted to the comparisons of RT with (RT+UHF). Since there were clearly too few treated with UHF without RT" (i.e. **c. Bladder** N=18 & **e. Any Invasive** N=49, with the **total** N=67). Since the group **e. Any invasive** was collected from Dr Holt's rooms 2001-2003, omitting the interval 1992-2001 (without explanation), until the stated "cut-off" of 31/12/2004, there would seem to be a large number of potential cases missing. The ramifications are not mentioned. With the number (N=49), those accrued in the brief interval were 6 (12%) each of breast and lung cancer, 2 (4%) prostate cancers, (16%) lung cancer and 7 (14%) malignant melanoma; not very useful numbers (strangely, no head and neck cancers). In that the patients accrued 2001-2003 could only be monitored for ~<3 years, how the 5 and 10 year survival figures were/could be derived is unclear.

"The number of patients obtained through the data audit was too small to make any meaningful comparison between the effect of treatment [RT versus (RT&UHF) versus UHF], and survival, and assessment was further complicated by the medical record culling process that had occurred."

A sample of 53 patients receiving UHF alone "was able to be matched." However, "A site was only included if in total there were at least 150 cases and at least 25 of these had been treated with UHF+RT." (This gobbledygook, lacking scientific rigour, may be difficult to understand by many.) Groups **a. Bladder** and **d. Any invasive** were the only RT groups, and their totals were 34 & 56 respectively, no other RT totals exceeded N=25) Attempted accrual of such UHF-alone patients through 1992-2001 (with a control group) would seem a possibility and obviously desirable, but apparently not done – with no explanation.

So, of the 6 groups, only those in **c.**, **e.** & **f.** (emphasized) had any relevance to Holt's and MAT's treatments from 1991 to the stated concluding date of the study (31/12/2004), yet there were **no relevant control negative groups** ! Perhaps the Review Committee was concerned (afraid ?) that, by having appropriate controls, the UHF treatments might be shown to have some benefits for patients ? Without controls, the amassed data are effectively meaningless. Surely the Review Committee knew that ?

- Despite the numbers of treatment locations and the differing levels of record-keeping and culling, the number of patients lost to follow-up (as opposed to documentation missing) seemed 0%. Whilst possible, this seems unlikely. There has been no comment, other than the processing was "meticulous" (several times).
- There may be a covert suspicion that the Review Committee set out to find no confirmation for Nelson & Holt's (1978) and later report, and then to fudge Holt's practice details (1991-), so that UHF alone will be left in limbo.
- There were appreciable discrepancies in the tables presenting the deaths/survival for the various tumour types – most showed an **increased** mortality numbers compared with the initial numbers! (As if someone had added a sprinkling of deaths to all the groups except the Bladder group – possibly because the bladder figures were processed separately.) The identified discrepancies (%) with the concluding Hazard Ratios are shown :

**Hazard ratios for RT + UHF compared with RT presented, ranked; compared with discrepancy % & P\***

Cancer site	Lymphoma	Prostate	Breast	Lung	Colorectal	Head & Neck	Bladder
Hazard ratio*	2.09	1.81	1.75	1.34	1.33	0.84	0.78
Discrepancy %	13.3%	20%	32%	1.9%	7.4%	9.1%	0%
Significance*	P<0.048 s	P<0.003 s	P<0.002 s	P<0.013 s	P<0.12 ns	P<0.55 ns	P<0.48 ns

\*Review's Result/Significance: P probability, Hazard Ratio > 1.0 is undesirable, s= significant, ns= not significant

Independent of other issues, results with discrepancies are unreliable, deceptive, untrustworthy and unbecoming for the NH&MRC, the top medical research body for Australia.

## CONCLUSION

"The analysis showed a survival disadvantage for patients treated with RT+UHF for four of the seven cancer sites (breast, lung, lymphoma and prostate) and no significant difference between RT+UHF for patients with head & neck cancer, colorectal cancer and bladder cancer." (My underlining.) And the discrepancies identified and presented here are the ones we know about !

There was a dire commercial need for Holt's UHF treatment to be unsupported by the NH&MRC, so that the actions against me would then be much harder to defend and the roles for clinical Pathologists expunged.

**The Review should be retracted formally – it is substandard.**

So, after nearly 50 years since Holt introduced UHF treatment into Australia, there has not been a reasonable and satisfactory clinical trial since the preliminary trials of Nelson and Holt (1978 & 1985): Trotter *et al.*, (1996) trialled UHF with an inappropriate cancer type and the NH&MRC introduced bias into a defective, incomplete and untrustworthy study in order to deceive.

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