

# Soundwaves effectively and precisely treat prostate cancer

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## Prostate cancer ultrasound precisely destroys prostate cancer using heat

### Treatment as effective as surgery or radiotherapy

Using high energy ultrasound beams to destroy prostate cancer tumours may be as effective as surgery or radiotherapy, but with fewer side effects.

A new study carried out by surgeons in Imperial College London, has reported outcomes of 1,379 men with prostate cancer treated at 13 hospitals across the UK who received a type of treatment called high-intensity focused ultrasound (HIFU).

The study is the largest ever of HIFU treatment used to target just the area of cancer, with men treated over the last 15 years. As the tumour is targeted precisely, instead of the whole prostate, there is less tissue damage and side-effects are much 10-fold lower than surgery or radiotherapy. During the treatment, there are no cuts made to the skin.

The study team found that at 7 years no man had died of prostate cancer. Approximately, 1 in 20 men needed further treatment after HIFU such as surgery or radiotherapy.

Professor Hashim Ahmed, senior author and urologist from the Department of Surgery and Cancer at Imperial, said: "Side effects of surgery or radiotherapy to the whole prostate can leave many patients leaking urine every day, or with erectile dysfunction. Radiotherapy can cause rectal problems."

He added: "We know that after focal HIFU, men recover quickly and have much fewer side effects. We now have excellent long-term cancer control data from the largest and longest study of focal HIFU treatment. We can be confident that HIFU is an effective cancer treatment for prostate cancer that should be offered routinely in the NHS."

Prostate cancer is the most common cancer in men in the UK, with over 52,000 cases every year. Treatments include surgery to remove the gland, or radiotherapy, which uses radiation to the entire prostate.

However, these treatments can cause collateral damage to surrounding sensitive tissues like nerves, muscles, urine passage, bladder and rectum. The prostate is roughly the size of a walnut and sits between the bladder and the penis.

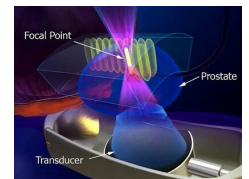
Surgery and radiotherapy to the entire prostate are effective treatments but can lead to long term risk of urinary problems like incontinence of between 10-30 per cent, and a risk of erectile dysfunction in between 30-60 per cent. Radiotherapy can also cause rectal problems like bleeding, diarrhoea and discomfort in 5-15 per cent.

Dr Deepika Reddy, lead author on the study, of Imperial College London, said that "HIFU treatment is similar to a 'lumpectomy' for other cancers. We treat the one or two cancer areas rather than the whole prostate. Men have 1 or two sessions of HIFU to the tumour to destroy it using heat that raises the temperature to 70-80 degrees centigrade to millimetre precision."

HIFU is performed under general anaesthetic, delivering beams of high energy ultrasound directly into the prostate gland, via a probe inserted up the back passage. There are no needles or cuts to skin. This allows a surgeon to precisely target tumour cells within the gland to millimetre accuracy, with less risk of damage to surrounding tissues.

In the new HIFU study, conducted on men with an average age of 66 years, over 90% of whom had medium to high risk cancer. The study team followed the number of patients who needed further treatment following HIFU like surgery or radiotherapy, to treat any cancer cells that had returned. They found that overall 5 per cent of patients needed further treatment by 7 years. In two previous studies produced by the same group, it was shown that failure after HIFU was the same as failure rates after surgery or radiotherapy.

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The team point out that many patients who are eligible for HIFU are not told of the treatment by their local team with only a few NHS centres, and some private hospitals, offering the treatment routinely.



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