

Can Sonography Treat and Help People with Diabetes?

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What is diabetes?

•**Diabetes is a chronic disease**

- Occurs when the body's pancreas cannot produce insulin, or the body's cells cannot withstand the insulin produced.

•**Insulin's role**

- The body needs insulin to regulate blood glucose levels.

•**Potential health risks**

- Can cause damage to:
 - Eyes
 - Kidneys
 - Nerves
 - Heart

What is Ultrasound/Sonography?

• Medical imaging technique that uses sound waves.

• Allows visualization of internal structures like arteries, gallbladder, and womb for pregnant women.

•**Before the procedure:**

- Sonographer applies a gel-like lubricant to the area of interest.

•**During the procedure:**

- A transducer is applied to the area of interest.
- Gel reduces air pockets that could block the sound waves.

•**Specialized Imaging**

• Sonographers may use a probe inserted into an opening to perform diagnostic imaging from within the body.

What is Focused Sonography?

- Focused sonography therapy stimulates pancreatic cells.

Why Would you need to stimulate the cells?

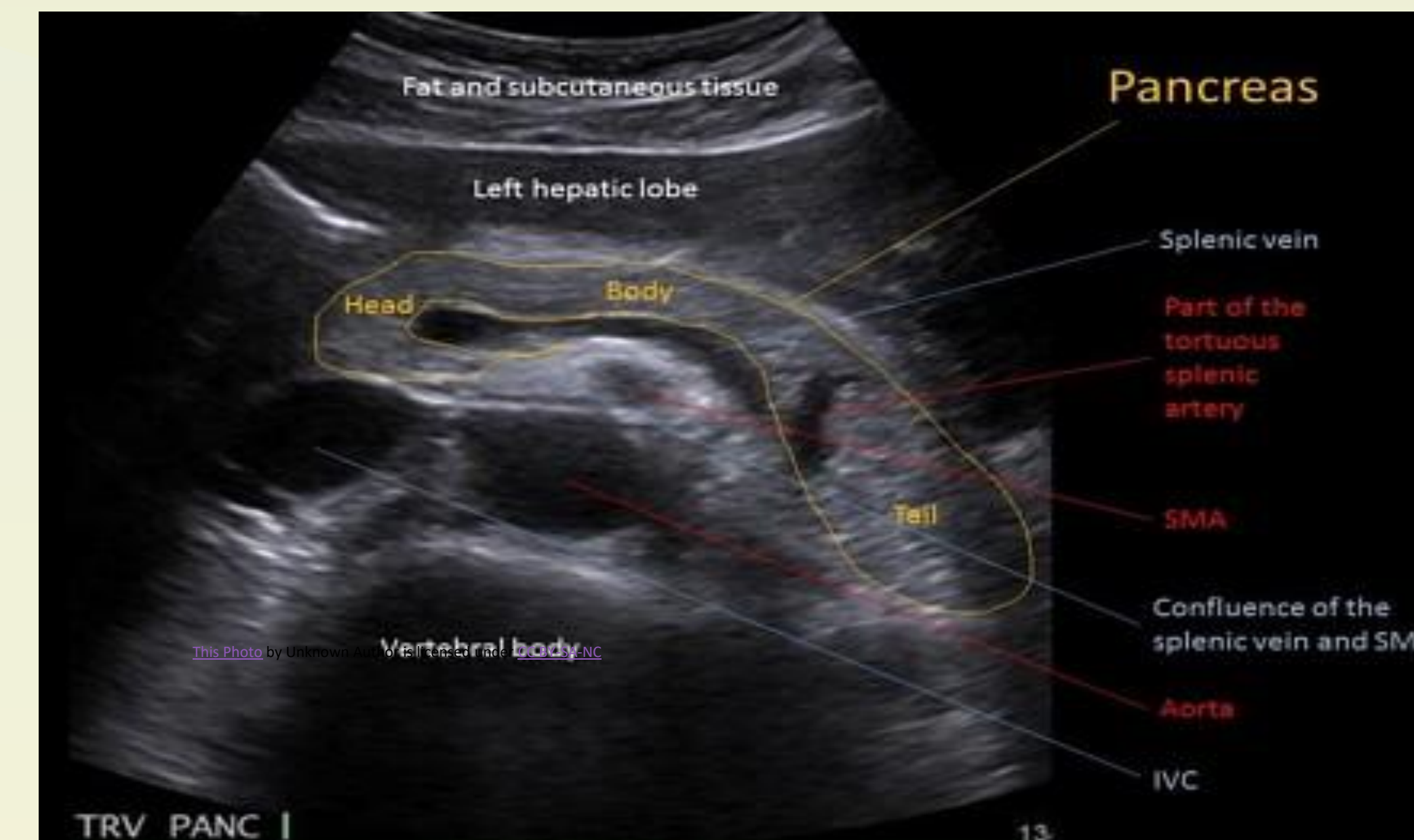
- Encourages pancreas to produce and release insulin.
- Can also activate body cells to absorb insulin more effectively.

How is this done?

- Uses a precisely focused beam over deep pancreatic tissue.
- Targets cells without damaging surrounding normal tissue.
- Transducer placed over pancreas to stimulate beta cells.

Why do we place the beam over the pancreas?

- Beta cells create and release insulin the body needs.
- Excess sugar → overproduction of insulin.
- Leads to beta cell damage or reduced function.
- Cells become insulin resistant which keeps the blood sugar high and progresses to diabetes.



The Facts!

- Clinical trial: 16 participants with type 2 diabetes
- Treatment: Focused ultrasound therapy
- Protocol: 15 minutes per day, for 3 days
- Result: Significant improvement in insulin resistance
- Diabetes: 7th leading cause of death in the U.S.
- Focused ultrasound: Promising new treatment for diabetes
- GE research team: Leading progress in developing this therapy
- Clinical trials: Now beginning human testing
- Future impact: Could transform how ultrasound is used in hospitals and clinics

Conclusion

This is only the beginning of revolutionary approach to treating diabetes. Focused ultrasound therapy offers new light for a future where diabetics can live freely without constant worry about access to insulin or micromanaging their meals. This breakthrough has the potential to dramatically improve quality of life of all people and change diabetes care for millions around the world.



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