What is claimed is:

1. A wireless vascular monitoring implant adapted to be deployed and implanted in a patient vasculature and positioned at a monitoring location in a vascular lumen in contact with the lumen wall, said implant comprising a resilient sensor construct (12) configured to dimensionally expand and contract with natural movement of the lumen wall; wherein:

the resilient sensor construct (12) comprises a resonant circuit having an inductance that changes in a known relationship to the dimensional expansion and contraction of the resilient sensor construct; and

said resonant circuit is adapted to produce a resonant frequency indicative of said inductance when remotely energized, said resonant frequency being readable wirelessly outside said vascular lumen to determine a dimension of the vascular lumen.

2. The wireless vascular monitoring implant of claim 1, wherein said resilient sensor construct (12) is configured for substantially permanent implantation on or in the lumen wall.

3. The wireless vascular monitoring implant of *any preceding claim*, wherein said resilient sensor construct (12) is configured to expand and contract with the lumen wall along substantially any transverse axis of said vascular lumen.

4. The wireless vascular monitoring implant of *any preceding claim*, wherein said resilient sensor construct (12) comprises a frame (44) having at least one resilient portion formed with at least two points configured to be positioned opposite one another so as to engage opposed surfaces of the vascular lumen wall when the sensor construct is positioned at the monitoring location in contact with the lumen wall and a coil configured to engage at least two opposed points on the vascular lumen wall, said coil having an inductance that varies based on the distance between said two opposed points on said coil wherein said coil is formed on said frame by at least one wire (42) disposed around said frame (44) so as to form plural adjacent wire strands around the frame.

5. The wireless vascular monitoring implant of claim 4, wherein said coil is configured to be energized by a magnetic field directed at the coil from outside the patient's body.

6. The wireless vascular monitoring implant of claim 4 or claim 5, wherein said coil comprises at least one capacitor element.

7. The wireless vascular monitoring implant of claim 4 or claim 5, wherein said coil comprises a bundle of multiple strands of wire wrapped multiple times around the entire circumference of said frame, resulting in multiple turns of multiple parallel bundles of multiple strands of wire, the bundle of multiple strands of wire formed by twisting parallel strands of wire into said bundle.

8. The wireless vascular monitoring implant of claim 7, wherein the capacitance of the resonant circuit consists of an inherent capacitance of the coil created by space between adjacent wire bundles.

9. The wireless vascular monitoring implant of *any preceding claim*, wherein said resilient sensor construct (12) has a looped zig-zag form.

10. The wireless vascular monitoring implant of claim 9, wherein said resilient sensor construct (12) comprises straight strut sections (38) joined at their ends by rounded crown sections (40) forming acute angles.

11. The wireless vascular monitoring implant of *any preceding claim* wherein said resilient sensor construct (12) is collapsible for delivery by a delivery catheter (122).

12. The wireless vascular monitoring implant of *any preceding claim* wherein the wireless vascular monitoring implant does not require a physical connection to a point outside the patient's body after implantation.

13. A wireless vascular sensing system, comprising a wireless vascular monitoring implant according *to any preceding claim,* and further comprising:

means for excitation of said resilient sensor construct (12) to produce a resonant frequency response signal indicative of a dimension of the lumen at a time correlated to said excitation; and

an antenna module (16) configured to receive the resonant frequency response signal from said implant, outside the patient's body.

14. The wireless vascular sensing system of claim 13, wherein the antenna module (16) comprises at least one antenna wire (82) configured to surround the patient at a location adjacent the monitoring implant at the monitoring location.

15. The wireless vascular sensing system of claim 13 or claim 14, wherein the antenna module comprises a belt (16b, 16c, 16d, 16e, 16f) configured to be wrapped around a patient's waist or torso.

16. The wireless vascular sensing system of any of claims 13 to 15, wherein the antenna module comprises a single coil antenna switchable between transmit and receive modes.