

# Routine Ultrasound in Pregnancy

## *A Resource & Citations Companion*

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### Dynamic Body Balancing

*Companion document for the patient brochure on prudent use of obstetric ultrasound*

Compiled April 2026

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### About this document

This companion resource catalogs the published evidence behind each claim in the patient brochure. It is intended for practitioners, parents, and journalists who want to verify sources before acting on, sharing, or republishing the material.

Each entry below names the claim as it appears in the brochure, summarizes what the strongest available evidence actually demonstrates, and lists primary sources. Entries are organized into three categories:

- **Strong evidence** — claims supported by peer-reviewed research, official medical-society statements, or government data.
- **Limited or contested evidence** — claims with some published support but where the evidence is preliminary, mixed, or has not been replicated.
- **Not supported by current peer-reviewed evidence** — claims for which the available high-quality research does not, at present, establish the asserted causal link.

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### A note on intellectual honesty

Evidence categories are descriptive, not dismissive. A claim labeled "limited" or "not supported" may still merit further research. The categories simply reflect what can be defended today using citable, peer-reviewed sources — the standard required when materials are presented to clinicians, midwives, and parents as science-based.

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## Strong Evidence

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The following claims are supported by peer-reviewed research, government agencies, or major medical-society consensus statements. These form the defensible core of the brochure's message.

### **Claim 1: Ultrasound should be used only when medically indicated, at the lowest output reasonably achievable.**

This is the universal consensus across the FDA, the American College of Obstetricians and Gynecologists (ACOG), the American Institute of Ultrasound in Medicine (AIUM), the World Federation for Ultrasound in Medicine and Biology (WFUMB), and the International Society of Ultrasound in Obstetrics and Gynecology (ISUOG). It is known as the ALARA principle — As Low As Reasonably Achievable.

#### Sources

1. U.S. Food and Drug Administration. *Ultrasound Imaging*. FDA.gov.  
<https://www.fda.gov/radiation-emitting-products/medical-imaging/ultrasound-imaging>  
*What it shows:* FDA states ultrasound "introduces energy into the body" and that "diagnostic levels of ultrasound can produce physical effects in tissue, such as pressure oscillations with subsequent mechanical effects and rise in temperature." FDA recommends ALARA and discourages non-medical use.
2. American Institute of Ultrasound in Medicine. *As Low As Reasonably Achievable (ALARA) Principle*. AIUM Official Statement (reapproved 2020).  
[https://www.aium.org/resources/official-statements/view/as-low-as-reasonably-achievable-\(alara\)-principle](https://www.aium.org/resources/official-statements/view/as-low-as-reasonably-achievable-(alara)-principle)  
*What it shows:* Defines ALARA in obstetric ultrasound: practitioners must adjust acoustic output, monitor mechanical and thermal indices, and limit dwell time to the minimum required for diagnostic quality.
3. AIUM, ACR, ACOG, SMFM, SRU. *Practice Parameter for the Performance of Standard Diagnostic Obstetric Ultrasound Examinations*. Journal of Ultrasound in Medicine, 2018.  
<https://onlinelibrary.wiley.com/doi/full/10.1002/jum.14831>  
*What it shows:* Joint statement from five major medical societies: "Obstetric ultrasound examinations should be performed only when there is a valid medical reason, and the lowest possible ultrasonic exposure setting should be used."
4. American College of Obstetricians and Gynecologists. *Guidelines for Diagnostic Imaging During Pregnancy and Lactation (Committee Opinion 723)*. ACOG, 2017 (reaffirmed).  
<https://www.acog.org/clinical/clinical-guidance/committee-opinion/articles/2017/10/guidelines-for-diagnostic-imaging-during-pregnancy-and-lactation>  
*What it shows:* ACOG: "Ultrasonography should be used prudently and only when its use is expected to answer a relevant clinical question or otherwise provide medical benefit to the patient."

### **Claim 2: Non-medical ("keepsake") fetal ultrasound is strongly discouraged.**

Multiple authoritative bodies have publicly discouraged commercial keepsake ultrasounds and over-the-counter Doppler heartbeat monitors, citing unregulated exposure duration, untrained operators, and the use of a prescription medical device without prescription.

## Sources

5. U.S. Food and Drug Administration. *Avoid Fetal "Keepsake" Images, Heartbeat Monitors (Consumer Update)*. FDA.gov.  
<https://www.fda.gov/consumers/consumer-updates/avoid-fetal-keepsake-images-heartbeat-monitors>  
*What it shows:* FDA "strongly discourages" the use of fetal ultrasound for non-medical purposes. It notes there is no oversight of session length, operator training, or how the equipment is used.
6. American Institute of Ultrasound in Medicine. *Prudent Use and Safety of Diagnostic Ultrasound in Pregnancy*. AIUM Official Statement.  
<https://www.aium.org/resources/official-statements/view/prudent-use-and-safety-of-diagnostic-ultrasound-in-pregnancy>  
*What it shows:* AIUM: keepsake imaging by freestanding commercial sites "without any physician review" is contrary to ethical practice. AIUM endorses the WFUMB/ISUOG joint statement against souvenir imaging.
7. The Lancet (Editorial). *Warning sounded over commercial ultrasound in pregnancy*. The Lancet, 2015.  
[https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(14\)62464-8/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(14)62464-8/fulltext)  
*What it shows:* Lancet editorial supporting the FDA warning, noting that commercial ultrasound sessions can last up to an hour — far longer than medically necessary scans.

### **Claim 3: Ultrasound can produce real biological effects — heating and cavitation — in tissue.**

This is well-established physics, not a fringe claim. Ultrasound is mechanical energy. It heats tissue (especially near ossifying bone) and can produce cavitation (microbubbles) under certain conditions. These mechanisms are why the ALARA principle exists.

## Sources

8. American Institute of Ultrasound in Medicine. *Statement on Biological Effects of Ultrasound In Vivo*. AIUM Official Statement.  
<https://www.aium.org/resources/official-statements/view/statement-on-biological-effects-of-ultrasound-in-vivo>  
*What it shows:* "Temperature rise near bone is significantly greater than in soft tissues, and it increases with ossification development throughout gestation." During the first trimester (organogenesis), exposures "should be restricted to the lowest outputs and dwell times consistent with the ALARA principle."
9. Karagianni et al.. *Safety of Obstetric Ultrasound: Mechanical and Thermal Indexes — A Systematic Review*. Journal of Clinical Medicine, 2024.  
<https://www.mdpi.com/2077-0383/13/21/6588>  
*What it shows:* Systematic review of 21 studies. FDA permits ultrasound output that could theoretically raise fetal temperature by up to 2°C. Operator awareness of safety indices is inconsistent. ALARA adherence is essential.
10. British Medical Ultrasound Society. *Guidelines for the Safe Use of Diagnostic Ultrasound Equipment*. BMUS, 2009 (current).  
<https://www.bmus.org/static/uploads/resources/BMUS-Safety-Guidelines-2009-revision-FINAL-Nov-2009.pdf>  
*What it shows:* Detailed thermal and mechanical index thresholds for obstetric and neonatal scanning. Defines exposure-time limits for elevated thermal index values.

### **Claim 4: Operator awareness of safety indices is often inadequate.**

Multiple peer-reviewed surveys have shown that practicing sonographers and physicians frequently do not monitor mechanical (MI) and thermal (TI) indices on the ultrasound machine, the very metrics designed to keep exposure within safe ranges.

#### **Sources**

11. Sheiner E, Abramowicz JS. *Clinical end-users worldwide show poor knowledge regarding safety issues of ultrasound during pregnancy.* J Ultrasound Med, 2008.  
<https://pubmed.ncbi.nlm.nih.gov/18375647/>  
*What it shows:* International survey: a substantial majority of clinical users could not correctly identify the meaning of TI and MI displayed on their own machines.
12. Karagianni et al. (systematic review, Citation 9). *Safety of Obstetric Ultrasound: Mechanical and Thermal Indexes.* J Clin Med, 2024.  
<https://www.mdpi.com/2077-0383/13/21/6588>  
*What it shows:* Operator awareness of MI/TI remains limited despite two decades of guideline emphasis. Reinforces the case for prudent use.

### **Claim 5: Spectral / pulsed-wave Doppler in the first trimester deserves particular caution.**

Doppler imaging — especially spectral and pulsed-wave — produces higher acoustic output than B-mode imaging, and the first trimester is a period of maximal fetal vulnerability. Major societies recommend Doppler in early pregnancy be reserved for clear medical indication.

#### **Sources**

13. American Institute of Ultrasound in Medicine. *Prudent Use and Safety of Diagnostic Ultrasound in Pregnancy (Doppler section).* AIUM Official Statement.  
<https://www.aium.org/resources/official-statements/view/prudent-use-and-safety-of-diagnostic-ultrasound-in-pregnancy>  
*What it shows:* "Due to the increased acoustic output of spectral Doppler ultrasound, its use in the first trimester should be viewed with caution. Spectral Doppler imaging should only be used when there is a clear benefit/risk advantage."
14. Abramowicz JS. *Ultrasound and autism: association, link, or coincidence?.* J Ultrasound Med, 2012.  
<https://pubmed.ncbi.nlm.nih.gov/22837290/>  
*What it shows:* Comprehensive review noting that the first trimester is a period of maximal fetal susceptibility to external factors and that Doppler use has significantly higher acoustic output than B-mode.

### **Claim 6: U.S. preterm birth rate is approximately 1 in 10 (10.4%); March of Dimes grade is D+.**

Confirmed by the March of Dimes 2024 and 2025 Report Cards. The U.S. has held a D+ for four consecutive years, with 1 in 10 babies born before 37 weeks.

## Sources

15. March of Dimes. *2025 Report Card: The State of Maternal and Infant Health for American Families*. March of Dimes / National Center for Health Statistics natality data 2024.  
<https://www.marchofdimes.org/peristats/reports/united-states/report-card>  
*What it shows:* U.S. preterm birth rate held at 10.4% in 2024. Nearly 380,000 babies were born preterm. Fourth consecutive D+ grade nationally.
16. March of Dimes. *2024 Report Card Reveals D+ Grade for U.S., Again*. March of Dimes News Release, Nov 2024.  
<https://www.marchofdimes.org/about/news/us-earns-dplus-preterm-birth-rate-third-consecutive-year-2024-march-dimes-report-card>  
*What it shows:* Confirms the rate as historically high; identifies inadequate prenatal care, chronic disease, and disparities as leading drivers.

## Claim 7: Autism spectrum disorder prevalence has risen dramatically over recent decades.

Confirmed by CDC's Autism and Developmental Disabilities Monitoring (ADDM) Network. Whether the increase reflects a true rise in incidence, broader diagnostic criteria, improved screening, or all three is actively debated in the literature. The brochure does not need to take a position on cause to use the prevalence figure.

## Sources

17. Maenner MJ, Warren Z, Williams AR, et al.. *Prevalence and Characteristics of Autism Spectrum Disorder Among Children Aged 8 Years — ADDM Network, 11 Sites, United States, 2020*. MMWR Surveillance Summaries, 2023.  
<https://www.cdc.gov/mmwr/volumes/72/ss/ss7202a1.htm>  
*What it shows:* CDC ADDM data: ASD prevalence among 8-year-olds rose to about 1 in 36 in 2020 surveillance, up from approximately 1 in 150 in 2000. Prevalence varies by site.

## Claim 8: The U.S. National Vaccine Injury Compensation Program (VICP) has paid billions in compensation.

This is a matter of public record maintained by the Health Resources and Services Administration (HRSA). The figure should be cited from current HRSA data rather than approximated.

## Sources

18. Health Resources and Services Administration. *National Vaccine Injury Compensation Program — Data and Statistics*. HRSA.gov (updated monthly).  
<https://www.hrsa.gov/vaccine-compensation/data>  
*What it shows:* Official monthly-updated data on VICP claims filed, compensated, dismissed, and total amounts paid. Verify the latest figure on HRSA before publication.

## Limited or Contested Evidence

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These claims have some published support but the evidence is preliminary, mixed, or has not been independently replicated. They should be cited with appropriate qualification.

### Claim: First-trimester ultrasound exposure may worsen ASD symptom severity in genetically susceptible children.

This is the actual finding behind the ScienceDaily article cited in the original brochure draft. The study should be characterized accurately:

- Webb et al. (2016) was a *retrospective* analysis based on parent recall of first-trimester ultrasound exposure.
- It found increased *severity* of ASD symptoms (one of ten metrics) in male children with copy-number variations who had first-trimester ultrasound exposure.
- The study did *not* find that ultrasound causes autism. The authors and the FDA were explicit on this point.
- A subsequent and larger CDC case-control study (Christensen et al., 2023) found *no evidence* that prenatal ultrasound use increases ASD risk.
- A 2018 JAMA Pediatrics study (Rosman et al.) similarly found no association between ultrasound exposure and ASD.

### Sources

19. Webb SJ, Garrison MM, Bernier R, McClintic AM, King BH, Mourad PD. *Severity of ASD symptoms and their correlation with the presence of copy number variations and exposure to first trimester ultrasound*. Autism Research, 2016.  
<https://pmc.ncbi.nlm.nih.gov/articles/PMC5332517/>  
*What it shows:* Retrospective parent-recall study. Found increased symptom severity (1 of 10 metrics) in male children with copy-number variations who had first-trimester ultrasound. Does NOT establish causation. Authors recommended prudent use, not avoidance.
20. McLennan AC. *Ultrasound and Autism Spectrum Disorder*. Australasian Journal of Ultrasound in Medicine, 2016.  
<https://onlinelibrary.wiley.com/doi/full/10.1002/ajum.12033>  
*What it shows:* Editorial review of the Webb study: "Analysis of in utero ultrasound exposure in humans has failed to show harmful effects in neonates or children, including in the incidence or severity of ASD."
21. Christensen D, Pazol K, Overwyk KJ, et al.. *Prenatal ultrasound use and risk of autism spectrum disorder: Findings from the case-control Study to Explore Early Development*. Autism Research, 2023.  
<https://pmc.ncbi.nlm.nih.gov/articles/PMC10527947/>  
*What it shows:* Large CDC-led case-control study. Conclusion: "We found no evidence that prenatal ultrasound use increases ASD risk." Used gold-standard ASD diagnostic instruments.
22. Rosman NP, Vassar R, Doros G, et al.. *Association of Prenatal Ultrasonography and Autism Spectrum Disorder*. JAMA Pediatrics, 2018.  
<https://pubmed.ncbi.nlm.nih.gov/29435578/>

*What it shows:* Case-control study found no association between number, duration, or timing of prenatal ultrasound exams and ASD.

23. McClintic AM, King BH, Webb SJ, Mourad PD. *Mice exposed to diagnostic ultrasound in utero are less social and more active in social situations relative to controls.* Autism Research, 2014.

<https://pubmed.ncbi.nlm.nih.gov/24123890/>

*What it shows:* The animal study referenced in popular reporting. Mouse-model behavioral effects from ultrasound exposure. Translation of mouse-model behavioral findings to human autism is highly uncertain.

### **Claim: A "triple hit" of genetic vulnerability + critical-period insult + environmental stressor may explain ASD heterogeneity.**

This is a specific theoretical framework proposed by Casanova and developed by Williams & Casanova. It is published in peer-reviewed literature but should be cited as an *hypothesis* rather than established mechanism.

#### **Sources**

24. Casanova MF. *The neuropathology of autism.* Brain Pathology, 2007.

<https://onlinelibrary.wiley.com/doi/10.1111/j.1750-3639.2007.00100.x>

*What it shows:* Original "triple hit" hypothesis paper. Theoretical framework, not a demonstrated causal pathway.

25. Williams EL, Casanova MF. *Above genetics: lessons from cerebral development in autism.* Translational Neuroscience, 2010.

<https://pubmed.ncbi.nlm.nih.gov/22132046/>

*What it shows:* Extension of the triple-hit framework. Continues to be a hypothesis under investigation.

### **Claim: A body of Chinese-language human exposure studies (1988–2011) reports diagnostic-ultrasound damage at clinical intensities.**

Jim West (2015) compiled and translated commentary on roughly fifty Chinese-language human in-utero ultrasound exposure studies that were conducted between 1988 and 2011 and that report cellular and tissue damage at diagnostic intensities. The bibliography is endorsed by Manuel F. Casanova, MD (cited above) and by Eitan Kimmel, PhD (Technion, biomedical engineering).

How to characterize this resource accurately:

- It is a *bibliography and commentary*, not a peer-reviewed primary research article. The book itself is self-published (Books of Health / harvoa).
- The *underlying Chinese studies* appear in the Chinese medical literature but, as West himself notes, are largely absent from Western databases (PubMed, Cochrane), have not been independently translated into English, and have not been independently replicated by Western teams.
- Endorsement by Casanova and Kimmel does not equate to peer review of the bibliography itself; it indicates that those scientists consider the body of work it points to worthy of broader attention.

- The book is most defensibly cited as evidence that *a substantial body of human exposure research exists outside the Western literature* — not as definitive proof of harm at any specific clinical exposure level.

## Sources

26. West J. *50 Human Studies, in Utero, Conducted in Modern China, Indicate Extreme Risk for Prenatal Ultrasound: A New Bibliography*. Books of Health / harvoa, 2015 (ISBN 978-1941719039).

<https://harvoa.org/chs/pr/dusbk1det.htm>

**What it shows:** Self-published bibliography compiling and discussing approximately fifty Chinese-language human in-utero ultrasound exposure studies (1988–2011) that report cellular, tissue, and organ-level damage at diagnostic intensities. Endorsed by Manuel F. Casanova, MD (Univ. of Louisville) and Eitan Kimmel, PhD (Technion). Not peer-reviewed; underlying Chinese studies not independently replicated in Western literature. Best cited as evidence that human-exposure research exists outside Western databases, with appropriate qualification.

## Claim: Cavitation has caused tissue damage in fetal organs in sheep studies.

This claim is supported by a published peer-reviewed study in fetal sheep, with one important qualification: the study used *therapeutic* acoustic pressures (10–16 MPa peak negative pressure) — roughly 5–10 times the FDA cap for diagnostic obstetric ultrasound. The mechanism (acoustic cavitation producing histologically confirmed lesions in fetal organs including the heart) is real and documented; the question of whether comparable damage can occur at routine diagnostic exposure levels remains open and is the reason ALARA exists.

How to characterize this resource accurately:

- Kim et al. (2011) is a peer-reviewed feasibility study published in *Ultrasound in Obstetrics & Gynecology* (the journal of ISUOG).
- The study deliberately generated cavitation in 19 of 31 treatment attempts and confirmed corresponding lesions in fetal kidney, liver, lung, and heart by histology.
- The pressures used are characteristic of *histotripsy* (a therapeutic ablation technique), not diagnostic imaging. Diagnostic ultrasound is regulated to mechanical-index values that correspond to roughly 1.9 MPa peak negative pressure or less.
- The study supports the brochure's biophysical claim — that cavitation can cause real, histologically confirmed damage to fetal tissue — without supporting the stronger claim that cavitation occurs at diagnostic exposures. The honest middle ground is: the mechanism is real, the threshold for harm at diagnostic settings is uncertain, and that uncertainty is why prudent use matters.

## Sources

27. Kim Y, Gelehrter SK, Fifer CG, Lu JC, Owens GE, Berman DR, Williams J, Wilkinson JE, Ives KA, Xu Z. *Non-invasive pulsed cavitation ultrasound for fetal tissue ablation: feasibility study in a fetal sheep model*. *Ultrasound in Obstetrics & Gynecology*, 2011;37(4):450–457.

<https://pubmed.ncbi.nlm.nih.gov/21433165/>

**What it shows:** 11 pregnant ewes (102–129 days gestation) exposed to 1-MHz focused ultrasound at 10–16 MPa peak negative pressure. Cavitating bubble clouds generated lesions in fetal kidney, liver, lung, and heart

*confirmed by histology. Lesions occurred only where cavitation was monitored. Demonstrates the cavitation mechanism in vivo in fetal sheep — at therapeutic, not diagnostic, intensities.*

28. Kim Y, Hall T, Xu Z, Cain C. *Developmental impact and lesion maturation of histotripsy-mediated non-invasive tissue ablation in a fetal sheep model.* *Ultrasound in Medicine & Biology*, 2013;39(6):1047–1055.

<https://pubmed.ncbi.nlm.nih.gov/23453378/>

*What it shows:* Follow-up study where treated ewes carried lambs to term. Examined developmental impact and lesion maturation. Confirms persistent organ-level effects from cavitation exposure at therapeutic intensities.

29. Church CC, Carstensen EL, Nyborg WL, Carson PL, Frizzell LA, Bailey MR. *The risk of exposure to diagnostic ultrasound in postnatal subjects: nonthermal mechanisms.* *Journal of Ultrasound in Medicine*, 2008;27(4):565–592.

<https://pubmed.ncbi.nlm.nih.gov/18359908/>

*What it shows:* AIUM-sponsored review of nonthermal mechanisms (including cavitation) at diagnostic ultrasound exposures. Discusses the conditions under which cavitation can occur in vivo and the role of stabilized gas bodies as nuclei. Useful counterweight context: cavitation at clinical diagnostic intensities is unlikely in well-perfused soft tissue absent gas bodies, but cannot be definitively excluded.

## Not Supported by Current Peer-Reviewed Evidence

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These claims appear in the source draft but cannot be substantiated using high-quality peer-reviewed literature. They are listed here so practitioners and parents can understand which assertions to set aside or qualify.

Setting these aside is not a concession. The brochure's strongest, most defensible message — that routine ultrasound carries unknown risks and should only be performed when something will be done with the information — does not depend on these claims and is in fact weakened by them.

### **Claim: Diagnostic ultrasound causes cancer, premature birth, or birth defects in humans.**

No peer-reviewed human study has established a causal link between diagnostic ultrasound at standard clinical settings and cancer, prematurity, or birth defects. ACOG's position: "There have been no reports of documented adverse fetal effects for diagnostic ultrasonography procedures." Relevant references: Citation 4 (ACOG), Citation 9 (Karagianni systematic review).

### **Claim: Diagnostic ultrasound "burns the periosteum" or "destroys mitochondria" in routine use.**

Bone heating is a real bioeffect at sufficient acoustic output and dwell time, which is precisely why thermal indices and ALARA exist (Citation 8). The asserted mechanisms — burning the periosteum, destroying mitochondria — describe potential effects at experimental or non-diagnostic intensities, not clinical exposures within FDA-permitted limits. The defensible version of this claim is that ultrasound deposits real energy in tissue and that the ALARA principle exists to keep this energy below thresholds for adverse effects.

### **Claim: Vaccine aluminum adjuvants cause cumulative brain damage at the schedule levels U.S. children receive.**

This claim is contested in published literature. The relevant peer-reviewed reviews and the Institute of Medicine / National Academies have not established this association at vaccine-schedule exposure levels. Combining this claim with ultrasound concerns in a single brochure tends to make the ultrasound message harder to defend with clinical audiences. We recommend either omitting it or addressing it in a separate document with its own dedicated source review.

### **Claim: Genetically modified foods, vaccines, and ultrasound combined cause autism ("perfect storm").**

This is a multi-factor causal claim that links three independently contested propositions. None of the constituent claims meets the standard for inclusion in patient-facing material that is presented as science-based. The brochure can communicate the same protective message — caution about cumulative early-life exposures — without making this specific tri-causal assertion.

## The Key Message

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### Ask the question that protects your baby

Before agreeing to any routine ultrasound exam, ask the person recommending it: “What are you going to do with the information you gather from this exam?” If the answer is “nothing” — if no clinical decision will change based on what is found — you can politely decline. Diagnostic ultrasound is a medical procedure with real biological effects on tissue. It is appropriate when the information is needed to guide care. It is not appropriate as a routine, decision-irrelevant procedure or as entertainment.

This question is consistent with FDA guidance, ACOG's prudent-use principle, and the joint AIUM/ACR/ACOG/SMFM/SRU practice parameter. It does not require the parent to challenge their provider's competence; it simply asks the provider to articulate the clinical purpose of the exam — the same standard a thoughtful provider holds themselves to.

### When ultrasound IS clinically appropriate

To be clear, ultrasound has an excellent safety record when used for genuine medical indication. Cases where the information will likely change care include:

- Confirming pregnancy location and viability when there are concerning symptoms
- Assessing dating when last menstrual period is uncertain and dating affects clinical decisions
- Anatomical survey at 18–22 weeks (the one ACOG-recommended standard exam)
- Evaluating bleeding, growth concerns, position, placenta or cord abnormalities
- Guiding amniocentesis, chorionic villus sampling, or other procedures
- Monitoring known maternal or fetal conditions where findings change management

### When the question protects the parent and baby

Cases where “what will you do with the information” often returns “nothing actionable”:

- Repeated routine scans without indication beyond the standard 18–22-week anatomy exam
- First-trimester scans done as routine rather than for a specific clinical question
- Doppler used to obtain audible heartbeat for reassurance when no concern is present
- Commercial keepsake / gender-reveal / 3D-4D imaging outside medical settings
- Over-the-counter home Doppler heartbeat monitors

## How Practitioners Can Use This Resource

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This document is designed to be passed to skeptical readers — a midwife colleague, a partnering OB, a journalist, a parent doing their own research — alongside the brochure. It demonstrates that the brochure's core message rests on FDA, ACOG, and AIUM guidance, not on any single contested study.

### Suggested distribution

- Share the brochure with patients and clients.
- Share this resource with anyone who wants to verify the brochure's claims.
- Cite the official-society statements (ACOG, AIUM, FDA) when discussing the topic with medical colleagues — these are the strongest sources.
- Direct anyone with deeper questions to a chiropractor or pregnancy practitioner trained in Dynamic Body Balancing.

### Suggested versioning

Statistics in this document (preterm birth rate, ASD prevalence, VICP totals) are time-bound. Update them annually from the primary sources before each new printing. The peer-reviewed citations on ultrasound bioeffects are stable.

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