

TEXAS 2019

EVALUATION OF Women's Right to Know Brochure

In 2016 Texas conducted a review of their “Women’s Right to Know” informational materials and later released a revised brochure. The Informed Consent Project conducted an evaluation of the medical accuracy of all statements about embryological and fetal development in this revised brochure. Below are our findings.

ANALYSIS OVERVIEW:

25% of all statements are medically inaccurate.

44% of all statements in the first trimester are medically inaccurate.

Statements were rated as “medically inaccurate” if they were either “false” (meaning *scientifically incorrect* in terms of biological development) or “misleading” (meaning they give an *incorrect impression* of biological development) For more information our research methods and publications, please see the Project website:

<http://informedconsentproject.com>

Statements were evaluated in two ways. Statements were rated against the Informed Consent ‘master database’ (produced by a panel of experts in human anatomy in 2013). Statements were also assessed against leading textbooks in human embryology and ultrasonography.ⁱ

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Primary Findings

1) Our analysis found a significant level of inaccurate statements (See Pie Chart below). The total % of inaccurate statements was slightly lower than the 2013 booklet (see Chart below). While some inaccurate statements were removed, other inaccurate statements remain in Texas’ revised brochure. In the course of Texas’ revisions, some inaccurate statements were removed (Week 4: “*The bone tissue is growing*”). Some inaccurate statements were slightly revised, but remain inaccurate (From Week 6: “*...the brain and spinal cord are completing development*” changed to “*....the brain and spinal cord begin to form*”). Some inaccurate statements remained the same (Week 8: “*All essential organs have begun to form*”).

2) Inaccurate statements were still concentrated in the first trimester of pregnancy, when most patients have abortions. (See Pie Charts below: 1st trimester inaccurate = 44%; 2nd trimester = 25%; 3rd trimester = 6%)

3) Statements often accelerated embryological or fetal development by misrepresenting systems as completed or present at earlier stages of development. Examples: *Week 10: “Activity in your baby’s brain can be recorded”* or *Week 12: “Fingernails appear”* or *Week 16: “The mouth makes sucking motions.”*

MEDICALLY INACCURATE STATEMENTS

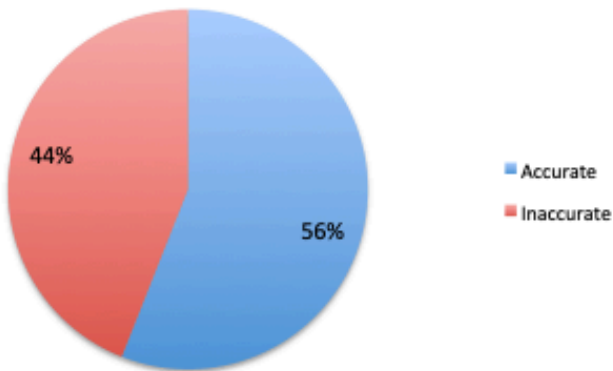
- 4 The cells that will become vital organs, such as the future heart and brain are developing
- 4 The blood vessels begin to form
- 4 The length is less than 1/8 inch
- 6 Your baby's heart begins to form
- 6 The brain and the spinal cord begin to form
- 6 The eyes and ears begin to form
- 8 Fingers and toes are developing
- 8 Facial features — the eyes, nose, lips and tongue — start to form.
- 8 All essential organs have begun to form.
- 8 Sex organs are beginning to form
- 10 The nerves that will control your baby's organs are formed
- 10 Activity in your baby's brain can be recorded
- 10 Elbows are formed, and fingernails appear.
- 10 The external ears begin to take final shape.
- 12 Fingernails appear
- 14 Your baby can respond to skin contact
- 14 Hiccup movements are present
- 14 Your baby is about 3½ inches long from head to bottom
- 16 The mouth makes sucking motions
- 16 Hand-to-face movements are common
- 18 The skin is wrinkled.
- 18 Your baby is about 5½ inches long from head to bottom
- 20 The structures of the ears are well-developed.
- 22 Your baby can be awakened from sleep by noises and your movements
- 22 Movements become more coordinated
- 22 The nervous system continues to develop.
- 26 Your baby's developing lungs are now fully formed

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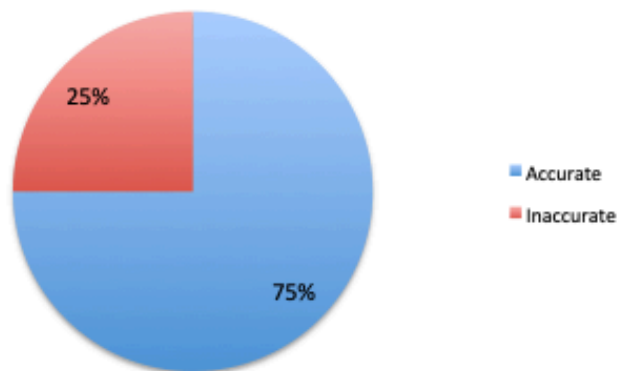
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- 26 The lines on the skin of the fingers (future fingerprints), toes, palms of the hands and soles of the feet are now formed.
- 28 The lungs and digestive system are formed and continue to develop.
- 34 Your baby is active (moving) 60 percent or more of the time.

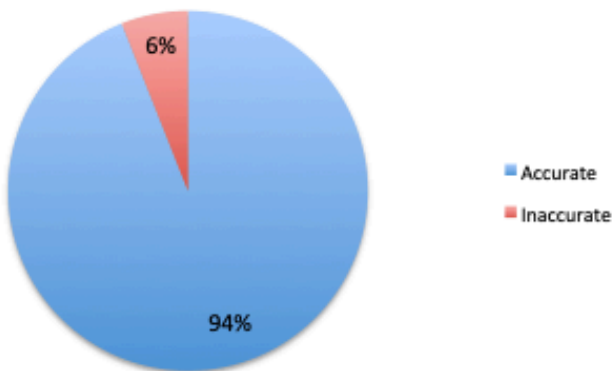
First Trimester Evaluation



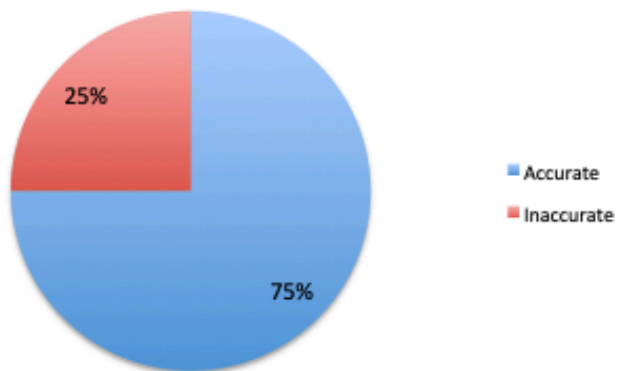
Second Trimester Evaluation



Third Trimester Evaluation



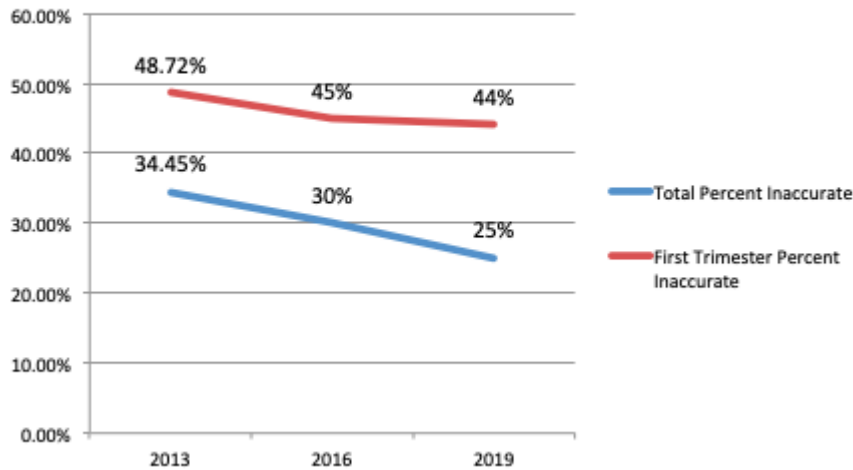
All Pregnancy Evaluation



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Inaccuracies Over Time



All Inaccurate Statements with Correct Medical Text

LMP	Booklet Text	Medical Text
4	The cells that will become vital organs, such as the future heart ... are developing	<p>“The fertilized egg moves through the fallopian tube, into the uterus and slowly embeds itself into the wall of the uterus. The fertilized egg divides, forming a compact ball of cells.” (Sadler’s, page 37; Moore (9th edition), page 32)</p> <p>[No heart/cardiovascular or brain cell differentiation]</p>
	The cells that will become vital organs, such as the ... brain are developing	
4	The blood vessels begin to form	<p>“The fertilized egg divides, forming a compact ball of cells.” (Sadler’s, page 37; Moore (9th edition), page 32)</p> <p>[no blood vessel differentiation at this stage]</p>
4	The length is less than 1/8 inch	<p>“The actual size of the conceptus is 0.1 mm, approximately the size of the period at the end of this sentence.” (Moore and Persuad, 9th edition, 42)</p> <p>[1/8 inch misrepresents as much larger than actual size]</p>

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6	Your baby's heart begins to form	Cells that will develop into a primordial heart tube begin to grow. (Moore and Persaud, 9 th edition, 290) [No "heart" but a primitive tube that will later develop into a heart.]
6	The brain ... begin to form	The flat embryo curves into a C-shaped tube with a head and tail. Along the length of the embryo, a tube that later becomes the brain and spinal cord develops. (Moore and Persaud, 7 th edition, 84) [No primitive brain or spinal cord. Just primordial tube that will later start to grow into brain and spinal cord development.]
	... the spinal cord begin to form	
6	The eyes ... begin to form	Shallow grooves appear which will later be the site of eyes and ears. (Sadler, 329). [No eyes and ears forming, beyond "site" of where they will later develop.]
	The ... ears begin to form	
8	Fingers ... are developing	"Tissue in the hand plates has condensed to form paddle-like digital rays." (Moore, 9 th edition, 375 Figure 16-4) [no distinction in fingers and toes, just paddle structures]
	... toes are developing	
8	Facial features — the eyes, ... — start to form.	"The eye, auricular hillocks (primordia of the external ear), and external acoustic meatus (auditory canal) are now more obvious" (Moore Color Atlas p. 41). The formation of a primordial nose is not mentioned until 51 days from fertilization. (Moore's Color Atlas, p. 44) "The eyelids develop during the sixth week from neural crest cell mesenchyme and from two folds of skin that grow over the cornea." (Moore, p. 502). [The primordial structures that will later become eyes and nose are present but not differentiated into "forming" eyes and nose. No forming yet of lips and tongue.]
	Facial features — the...nose,... — start to form.	
	Facial features — the... lips ... — start to form.	
	Facial features — the ... tongue — start to form.	
8	All essential organs have begun to form.	"...all major organs and systems of the body form from the three germ layers" ***With gastrulation, 3 primordial germ layers form during week 5 LMP. These layers are the foundation for future development of organs, which develop at different rates. (Moore and Persaud, 9 th edition, 71).

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		[Organogenesis (organ formation) occurs as cells assemble to form tissues and tissues combine to form organs. No specific organ differentiation at this stage, just primitive layers of cells.]
8	Sex organs are beginning to form	<p>“[in the eighth week] Although sex differences exist in the appearance of external genitalia, they are not distinctive enough to permit accurate sexual identification” (Moore and Persuad, 9th edition, 100). “[By] the 12th week [14 weeks LMP], external genitalia develop to such a degree that the sex of the fetus can be determined by external examination (ultrasound).” (Sadler, 96)</p> <p>[Primitive cells, but not “sex organs” yet developed; not until 14 LMP are sex organs formed enough to distinguish as “beginning to form.”]</p>
10	The nerves that will control your baby's organs are formed	No textbook source discusses nerve development that will control organs at this stage.
10	Activity in your baby's brain can be recorded	No textbook source for recording brain activity at this stage.
10	Elbows are formed...	“At 50-56 days (10 LMP), limbs are long and upper limbs are bent at elbows.” (Sadler’s, 84, Table 6.4)
	... and fingernails appear.	[No elbows are “formed”; No fingernails at this stage.]
10	The external ears begin to take final shape.	<p>“At 54-55 weeks (10 LMP), auricles of external ears are more developed.” (Moore, 9th ed, 78, Table 5-1).</p> <p>“As the face develops, the auricle is gradually translocated from its original location low on the side of the neck to a more lateral and cranial site.” (Larsen, 264)</p> <p>[External location of ears not yet formed. No text indicates ears taking “final shape” at this stage of development]</p>
12	Fingernails appear	<p>“...fingernails are present by 24 weeks (from fertilization) [26 LMP]” (Moore’s Color Atlas, 57)</p> <p>[fingernails do not “appear” at this stage; they are not “present” until 26 LMP]</p>

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14	Your baby can respond to skin contact	No source for fetus responding to skin contact at this stage of development.
14	Hiccup movements are present	Hiccup movements begin at 16 LMP, but typically do not occur until the end of the 2nd or 3rd trimester (Kurjak, p. 80).
14	Your baby is about 3½ inches long from head to bottom	“120mm” (Moore p. 109) [or 4.7 inches]
16	The mouth makes sucking motions	“Sucking movements begin at week 24 [26 LMP]” (Sadler, 99)
16	Hand-to-face movements are common	Hand-head contact may “appear from 10th week (12 LMP] onwards and at first they usually represent an accidental contact of a hand with the face or mouth” (Kurjak, p. 653). [Hand to face movements misrepresent intentionality of fetal movement, rather than “accidental” contact]
18	The skin is wrinkled.	“The skin is now covered with a greasy, cheese-like material—vernix caseosa.” (Moore, on line, Loc 3107). “The fetuses are usually completely covered with fine downy hair—lanugo—that helps to hold the vernix caseosa on the skin.” (Moore, on line, Loc 3126). “The fetus is covered with fine hair, called lanugo hair...” (Sadler, 97.) [Misrepresentation of the nature of skin development]
18	Your baby is about 5½ inches long from head to bottom	Correct average size is “7 ½ inches” (Sadler’s p. 96, Table 8.1).
20	The structures of the ears are well-developed.	The primitive auricular hillocks begin formation at 7 weeks LMP and differentiate over time. Early in the 3rd month, the ectodermal epithelium of the forming meatus proliferates and forms a solid meatal plug that becomes an extended channel that reaches the tympanic membrane by week 28. [Ears not “well-developed until 28 weeks.]
22	Your baby can be awakened from	No source describes fetus as waking and sleeping at this stage.

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	sleep by noises and your movements	
22	Movements become more coordinated	No source describes movements being “coordinated” at this stage.
22	The nervous system continues to develop.	[Statement too vague to be evaluation as “accurate” in textbook sources.]
26	Your baby’s developing lungs are now fully formed	<p>“Although a 22- to 25- week [24-27 LMP] fetus born prematurely may survive if given intensive case..., it may die because its respiratory system is still immature.” (Moore and Persuad, 9th edition,113)</p> <p>[Lungs are not “fully formed” but are still immature.]</p>
26	The lines on the skin of the fingers (future fingerprints)... are now formed.	<p>“At the end of the fourth month the epidermis acquires its definitive arrangement and four layers can be distinguished. The basal layer...later forms ridges and hollows, which are reflected on the surface of the skin in the fingerprint.” (Sadler, 315)</p> <p>[“Ridges and hollows are not fully “formed” finger or toe prints.]</p>
	The lines on the skin of the... toes, ... are now formed.	
	The lines on the skin of the ... palms of the hands ... are now formed.	
	The lines on the skin of the... soles of the feet are now formed.	
28	The lungs ... are formed and continue to develop.	<p>“By the end of the seventh month [30 LMP], sufficient numbers of mature alveolar sacs and capillaries are present to guarantee adequate gas exchange [in lungs], and the premature infant is able to survive.” (Sadler, 205, Fig. 14.9)</p> <p>[Lungs and digestive system are not yet “formed.”]</p>
	The... digestive system are formed and continue to develop.	

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34	Your baby is active (moving) 60 percent or more of the time	No source indicated what percentage of time fetus is “active (moving).”
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- Moore, Keith, TVN Persaud, and Mark G. Torchia, The Developing Human: Clinically Oriented Embryology, 7th Edition, (Saunders, Philadelphia, PA, 2003)
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