

IMPORTANT

The old “AFP-Profile” screen is now called: **Maternal Quad Screen**.

With the inclusion of additional screening options to the Iowa Maternal Screening Program (IMSP), we needed to be more explicit in naming the various screen options including the renaming of the current 2nd trimester screen already in use.

The **Maternal Quad Screen** is fundamentally still the same.

The same information is requested (and necessary for proper interpretation of the screen results), the same serum specimen is needed (collected in the 2nd Trimester), and the same screening performance is provided.

However:

CHANGES have been made to the **Maternal Quad Screen** patient report.

**** A “test results” table and Sample Reports are **provided below** ****

Although the basic format of the report is still the same, there have been changes made to the “Laboratory Results” section.

- 1) The “Result” and “Reference Range” for the markers are no longer going to appear on the report (see sample reports below). Since each marker concentration changes significantly by gestational age (GA) during the course of a normal pregnancy, the informative result for each of the markers is the Multiple of the Median (MoM). The MoM is generated by dividing the individual’s analyte value by the GA-specific median value determined from the normal population of women being screened. To avoid confusion and misunderstandings, the marker concentrations and reference ranges have been removed.
- 2) The “Age Related DS Risk” will be included for all women screened which previously was only provided when the woman’s age at delivery was 35 years or older (see sample reports below). This is the *a priori* risk of having an affected fetus at the time the screen is performed based on maternal age alone.
- 3) Some changes in the trailer for this test have also been made (see table below).
- 4) The text of the trailer and other test reporting information, as well as new sample reports, are provided below.

Maternal Quad Screen

Testing	Laboratory Result
AFP Estriol (uE3) hCG Inhibin	MoM

Screen	Screen Cut-off	Laboratory Result	Interpretation	Recommended Action	
(Open) Neural Tube Defects NTD	AFP MoM ≥2.2	AFP MoM	Screen Negative for NTD	No further action	
			Screen Positive for NTD	[IF] GA based on LMP	Ultrasound for dates and call consultants at 319-356-8892
				[IF] GA based on US	Level II Ultrasound and/or consideration for amniocentesis
Age Related DS Risk	N/A	Risk [1:n]	N/A	N/A	
Down Syndrome (DS) Risk	1:150	Risk [1:n]	Screen Negative for Downs	No further action	
			Screen Positive for Downs	[IF] GA based on LMP	Ultrasound for dates and call consultants at 319-356-8892
				[IF] GA based on US	Offer amniocentesis
Trisomy 18 Risk	1:100	Risk [1:n]	Screen Negative for Trisomy 18	No further action	
			Screen Positive for Trisomy 18	Offer amniocentesis	

If ALL screens are negative	Screen Negative	No further action
If ANY screen is positive each will be listed		

TEST TRAILER

Screening will detect approximately 79% of fetuses with Down syndrome, 80% of fetuses with Trisomy 18 and 85% of fetuses with open neural tube defects in a singleton pregnancy. This test does not reliably detect other chromosomal abnormalities. Maternal screening has some level of inherent false negative and false positive results and is not a substitute for diagnostic testing. This report is based on the clinical information provided. Missing or incorrect data will result in an inaccurate interpretation. Please review and call 319-356-3561 with questions.



Hygienic Laboratory

The University of Iowa

AFP-DEPT
 UNIVERSITY OF IOWA HYGIENIC LAB
 102 OAKDALE CAMPUS

 IOWA CITY, IA 52242-

Patient | **QUAD, SCREEN NEGATIVE**
Lab # | 2008160055
Date Collected | 12-10-2008
Date Received | 12-18-2008
Birth Date | 01-30-1977
Gender |

Address |
 ia

Phone # |
Patient Id |
Provider |

There are no further tests pending on this specimen

Maternal Quad Screen

Analysis performed in Iowa City

<i>Patient History</i>	<i>Maternal Age At Delivery</i>	32.3 years	<i>Gestational Age</i>	132 days by US
	<i>Maternal Weight</i>	105.0 lbs.	<i>LMP</i>	
	<i>Insulin Dependent Diabetic</i>	No	<i>Ultrasound</i>	2008-11-04
	<i>Maternal Race Black</i>	No	<i>CRL</i>	77 mm
	<i>Family History of NTD</i>	No	<i>BpD</i>	
	<i>Number of Fetuses</i>	1		

<i>Laboratory Results</i>	<u>Testing</u>	<u>MoM</u>	<u>Screening Cutoffs</u>
	AFP	1.36	NTD >= 2.2
	Estriol (uE3)	1.21	
	HCG	1.54	
	Inhibin	2.86	

<u>Screen</u>	<u>Risk</u>	<u>Screening Cutoffs</u>
Age Related DS Risk	1:560	
Down Syndrome (DS) Risk	1:3800	1:150
Trisomy 18 Risk	1:99000	1:100

<u>Interpretation</u>	<u>Recommended Action</u>
Screen Negative	No further action

Note Screening will detect approximately 79% of fetuses with Down syndrome, 80% of fetuses with Trisomy 18 and 85% of fetuses with open neural tube defects in a singleton pregnancy. This test does not reliably detect other chromosomal abnormalities. Maternal screening has some level of inherent false negative and false positive results and is not a substitute for diagnostic testing. This report is based on the clinical information provided. Missing or incorrect data will result in an inaccurate interpretation. Please review and call 319-356-3561 with questions.



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 IOWA CITY, IA 52242-

Patient | **QUAD, PP NTD LMP**
Lab # | 2008169440
Date Collected | 12-05-2008
Date Received | 12-10-2008
Birth Date | 03-14-1983
Gender | F

Address |
 ia

Phone #
Patient Id
Provider

There are no further tests pending on this specimen

Maternal Quad Screen

Analysis performed in Iowa City

<i>Patient History</i>	<i>Maternal Age At Delivery</i>	26.2 years	<i>Gestational Age</i>	120 days by LMP
	<i>Maternal Weight</i>	181.0 lbs.	<i>LMP</i>	2008-08-07
	<i>Insulin Dependent Diabetic</i>	No	<i>Ultrasound</i>	
	<i>Maternal Race Black</i>	No	<i>CRL</i>	
	<i>Family History of NTD</i>	No	<i>BpD</i>	
	<i>Number of Fetuses</i>	1		

<i>Laboratory Results</i>	<u>Testing</u>	<u>MoM</u>	<u>Screening Cutoffs</u>
	AFP	2.91	NTD >= 2.2
	Estriol (uE3)	1.05	
	HCG	1.50	
	Inhibin	2.61	

<u>Screen</u>	<u>Risk</u>	<u>Screening Cutoffs</u>
Age Related DS Risk	1:1000	
Down Syndrome (DS) Risk	1:56000	1:150
Trisomy 18 Risk	1:99000	1:100

<u>Interpretation</u>	<u>Recommended Action</u>
Screen Positive for NTD	Ultrasound for dates and call consultants at 319-356-8892
Screen Negative for Downs	No further action
Screen Negative for Trisomy 18	No further action

Note *Screening will detect approximately 79% of fetuses with Down syndrome, 80% of fetuses with Trisomy 18 and 85% of fetuses with open neural tube defects in a singleton pregnancy. This test does not reliably detect other chromosomal abnormalities. Maternal screening has some level of inherent false negative and false positive results and is not a substitute for diagnostic testing. This report is based on the clinical information provided. Missing or incorrect data will result in an inaccurate interpretation. Please review and call 319-356-3561 with questions.*



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 102 OAKDALE CAMPUS

 IOWA CITY, IA 52242-

Patient | **QUAD, PP NTD**
Lab # | 2008167581
Date Collected | 12-02-2008
Date Received | 12-03-2008
Birth Date | 10-02-1980
Gender | F

Address |
 ia

Phone #
Patient Id
Provider

There are no further tests pending on this specimen

Maternal Quad Screen

Analysis performed in Iowa City

<i>Patient History</i>	<i>Maternal Age At Delivery</i>	28.6 years	<i>Gestational Age</i>	129 days by US
	<i>Maternal Weight</i>	176.0 lbs.	<i>LMP</i>	2008-07-26
	<i>Insulin Dependent Diabetic</i>	No	<i>Ultrasound</i>	2008-12-02
	<i>Maternal Race Black</i>	No	<i>CRL</i>	
	<i>Family History of NTD</i>	No	<i>BpD</i>	41 mm
	<i>Number of Fetuses</i>	1		

<i>Laboratory Results</i>	<u>Testing</u>	<u>MoM</u>	<u>Screening Cutoffs</u>
	AFP	2.29	NTD >= 2.2
	Estriol (uE3)	0.90	
	HCG	2.55	
	Inhibin	1.95	

<u>Screen</u>	<u>Risk</u>	<u>Screening Cutoffs</u>
Age Related DS Risk	1:870	
Down Syndrome (DS) Risk	1:14000	1:150
Trisomy 18 Risk	1:99000	1:100

<u>Interpretation</u>	<u>Recommended Action</u>
Screen Positive for NTD	Level II Ultrasound and/or consideration for amniocentesis
Screen Negative for Downs	No further action
Screen Negative for Trisomy 18	No further action

Note Screening will detect approximately 79% of fetuses with Down syndrome, 80% of fetuses with Trisomy 18 and 85% of fetuses with open neural tube defects in a singleton pregnancy. This test does not reliably detect other chromosomal abnormalities. Maternal screening has some level of inherent false negative and false positive results and is not a substitute for diagnostic testing. This report is based on the clinical information provided. Missing or incorrect data will result in an inaccurate interpretation. Please review and call 319-356-3561 with questions.



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AFP-DEPT
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 IOWA CITY, IA 52242-

Patient | **QUAD, PP DS LMP**
Lab # | 2008124628
Date Collected | 12-08-2008
Date Received | 12-15-2008
Birth Date | 07-10-1980
Gender | F

Address |
 ia

Phone #
Patient Id
Provider

There are no further tests pending on this specimen

Maternal Quad Screen

Analysis performed in Iowa City

<i>Patient History</i>	<i>Maternal Age At Delivery</i>	28.9 years	<i>Gestational Age</i>	118 days by LMP
	<i>Maternal Weight</i>	210.0 lbs.	<i>LMP</i>	2008-08-12
	<i>Insulin Dependent Diabetic</i>	Yes	<i>Ultrasound</i>	
	<i>Maternal Race Black</i>	No	<i>CRL</i>	
	<i>Family History of NTD</i>	Unknown	<i>BpD</i>	
	<i>Number of Fetuses</i>	1		

<i>Laboratory Results</i>	<u>Testing</u>	<u>MoM</u>	<u>Screening Cutoffs</u>
	AFP	0.52	NTD >= 2.2
	Estriol (uE3)	0.87	
	HCG	2.72	
	Inhibin	2.25	

<u>Screen</u>	<u>Risk</u>	<u>Screening Cutoffs</u>
Age Related DS Risk	1:850	
Down Syndrome (DS) Risk	1:20	1:150
Trisomy 18 Risk	1:47000	1:100

<u>Interpretation</u>	<u>Recommended Action</u>
Screen Negative for NTD	No further action
Screen Positive for Downs	Ultrasound for dates and call consultants at 319-356-8892
Screen Negative for Trisomy 18	No further action

Note *Screening will detect approximately 79% of fetuses with Down syndrome, 80% of fetuses with Trisomy 18 and 85% of fetuses with open neural tube defects in a singleton pregnancy. This test does not reliably detect other chromosomal abnormalities. Maternal screening has some level of inherent false negative and false positive results and is not a substitute for diagnostic testing. This report is based on the clinical information provided. Missing or incorrect data will result in an inaccurate interpretation. Please review and call 319-356-3561 with questions.*



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 102 OAKDALE CAMPUS

 IOWA CITY, IA 52242-

<i>Patient</i>	QUAD, PP DS	
<i>Lab #</i>	2008160056	<i>Revision 1</i>
<i>Date Collected</i>	12-10-2008	
<i>Date Received</i>	12-18-2008	
<i>Birth Date</i>	01-10-1971	
<i>Gender</i>		
<i>Address</i>		ia
<i>Phone #</i>		
<i>Patient Id</i>		
<i>Provider</i>		

There are no further tests pending on this specimen

Maternal Quad Screen
Corrected Version 1 on 01-07-2009
Analysis performed in Iowa City

<i>Patient History</i>	<i>Maternal Age At Delivery</i>	38.4 years	<i>Gestational Age</i>	127 days by US
	<i>Maternal Weight</i>	105.0 lbs.	<i>LMP</i>	2008-08-18
	<i>Insulin Dependent Diabetic</i>	No	<i>Ultrasound</i>	2008-11-03
	<i>Maternal Race Black</i>	No	<i>CRL</i>	66 mm
	<i>Family History of NTD</i>	No	<i>BpD</i>	
	<i>Number of Fetuses</i>	1		

<i>Laboratory Results</i>	<u>Testing</u>	<u>MoM</u>	<u>Screening Cutoffs</u>
	AFP	0.52	NTD >= 2.2
	Estriol (uE3)	0.39	
	HCG	3.33	
	Inhibin	2.31	

<u>Screen</u>	<u>Risk</u>	<u>Screening Cutoffs</u>
Age Related DS Risk	1:120	
Down Syndrome (DS) Risk	1:10	1:150
Trisomy 18 Risk	1:4800	1:100

<u>Interpretation</u>	<u>Recommended Action</u>
Screen Negative for NTD	No further action
Screen Positive for Downs	Offer amniocentesis
Screen Negative for Trisomy 18	No further action

Note Screening will detect approximately 79% of fetuses with Down syndrome, 80% of fetuses with Trisomy 18 and 85% of fetuses with open neural tube defects in a singleton pregnancy. This test does not reliably detect other chromosomal abnormalities. Maternal screening has some level of inherent false negative and false positive results and is not a substitute for diagnostic testing. This report is based on the clinical information provided. Missing or incorrect data will result in an inaccurate interpretation. Please review and call 319-356-3561 with questions.



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 IOWA CITY, IA 52242-

Patient | **QUAD, PP T18**
Lab # | 2008110637
Date Collected | 12-07-2008
Date Received | 12-10-2008
Birth Date | 06-10-1981
Gender | F

Address |
 ia

Phone #
Patient Id
Provider

There are no further tests pending on this specimen

Maternal Quad Screen

Analysis performed in Iowa City

<i>Patient History</i>	<i>Maternal Age At Delivery</i>	28.0 years	<i>Gestational Age</i>	113 days by US
	<i>Maternal Weight</i>	313.0 lbs.	<i>LMP</i>	
	<i>Insulin Dependent Diabetic</i>	No	<i>Ultrasound</i>	2008-10-16
	<i>Maternal Race Black</i>	No	<i>CRL</i>	22 mm
	<i>Family History of NTD</i>	No	<i>BpD</i>	
	<i>Number of Fetuses</i>	1		

<i>Laboratory Results</i>	<u>Testing</u>	<u>MoM</u>	<u>Screening Cutoffs</u>
	AFP	0.96	NTD >= 2.2
	Estriol (uE3)	0.51	
	HCG	0.16	
	Inhibin	0.39	

<u>Screen</u>	<u>Risk</u>	<u>Screening Cutoffs</u>
Age Related DS Risk	1:910	
Down Syndrome (DS) Risk	1:93000	1:150
Trisomy 18 Risk	1:17	1:100

<u>Interpretation</u>	<u>Recommended Action</u>
Screen Negative for NTD	No further action
Screen Negative for Downs	No further action
Screen Positive for Trisomy 18	Offer amniocentesis

Note *Screening will detect approximately 79% of fetuses with Down syndrome, 80% of fetuses with Trisomy 18 and 85% of fetuses with open neural tube defects in a singleton pregnancy. This test does not reliably detect other chromosomal abnormalities. Maternal screening has some level of inherent false negative and false positive results and is not a substitute for diagnostic testing. This report is based on the clinical information provided. Missing or incorrect data will result in an inaccurate interpretation. Please review and call 319-356-3561 with questions.*