

**"We will promote the health of pregnant women in Fukushima Prefecture."**

The Pregnancy and Birth Survey was commenced in order to ascertain mental and physical health conditions of pregnant women in Fukushima Prefecture after the Great East Japan Earthquake and the subsequent accident at TEPCO's Fukushima Daiichi NPS, with the aim of alleviating their anxieties and providing necessary care, and also improving obstetric and gynecological care in Fukushima Prefecture.

Prepared based on the website of the Radiation Medical Science Center for the Fukushima Health Management Survey, Fukushima Medical University (information on the Pregnancy and Birth Survey)

Fukushima Prefecture has been conducting the Pregnancy and Birth Survey in order to ascertain mental and physical health conditions of pregnant women in the prefecture after the Great East Japan Earthquake and the subsequent accident at Tokyo Electric Power Company (TEPCO)'s Fukushima Daiichi NPS, with the aim of alleviating their anxieties and providing necessary care, and also improving obstetric and gynecological care in Fukushima Prefecture.

Included in this reference material on March 31, 2013

Updated on March 31, 2022

[Eligible subjects]

Pregnant women who obtained a maternity handbook within Fukushima Prefecture and those who obtained a maternity handbook somewhere else but gave birth in the prefecture during the survey period for every fiscal year

Fiscal year	Eligible subjects	Responses from
FY2011	16,001 people	9,316 people (58.2%)
FY2012	14,516 people	7,181 people (49.5%)
FY2013	15,218 people	7,260 people (47.7%)
FY2014	15,125 people	7,132 people (47.2%)
FY2015	14,572 people	7,031 people (48.3%)
FY2016	14,154 people	7,326 people (51.8%)
FY2017	13,552 people	6,449 people (47.6%)
FY2018	12,838 people	6,649 people (51.8%)
FY2019	11,909 people	6,328 people (53.1%)
FY2020	11,382 people	6,359 people (55.9%)

Conducted a follow-up survey in approx. 4 years after delivery

Eligible subjects	Responses from
7,252 people	2,554 people (35.2%)
5,602 people	2,021 people (36.1%)
5,734 people	2,706 people (47.2%)
5,856 people	2,719 people (46.4%)

Conducted the second follow-up survey in approx. 8 years after delivery

Eligible subjects	Responses from
6,643 people	2,354 people (35.4%)
5,152 people	2,178 people (42.3%)

## [Survey method]

Inquiry sheets are sent to the targeted pregnant women, asking them to fill in the sheets and send them back. (From the FY2016 survey, responses are accepted by post or online.)

Major survey items are as follows:

- Pregnant women's mental health conditions
- Present living conditions (circumstances of a refugee life or forced separation from family members)
- Situations during delivery and pregnant women's physical health conditions
- Confidence in raising children
- Attitude toward the next pregnancy

Prepared based on the website of the Radiation Medical Science Center for the Fukushima Health Management Survey, Fukushima Medical University and the materials for the 44th Prefectural Oversight Committee Meetings for Fukushima Health Management Survey

The Pregnancy and Birth Survey covers (i) pregnant women who newly obtained a maternity handbook in Fukushima Prefecture and (ii) those who obtained a maternity handbook elsewhere but gave birth in the prefecture during the survey period.

For those falling under (i), inquiry sheets are sent based on information provided by each municipality in the prefecture. Those falling under (ii) may use inquiry sheets provided by obstetric institutions in the prefecture or request the Radiation Medical Science Center for the Fukushima Health Management Survey, Fukushima Medical University, to send them inquiry sheets.

For respondents to the main survey in FY2011 to FY2014, the first follow-up survey (4 years after delivery) was completed and the second follow-up survey (8 years after delivery) is being conducted.

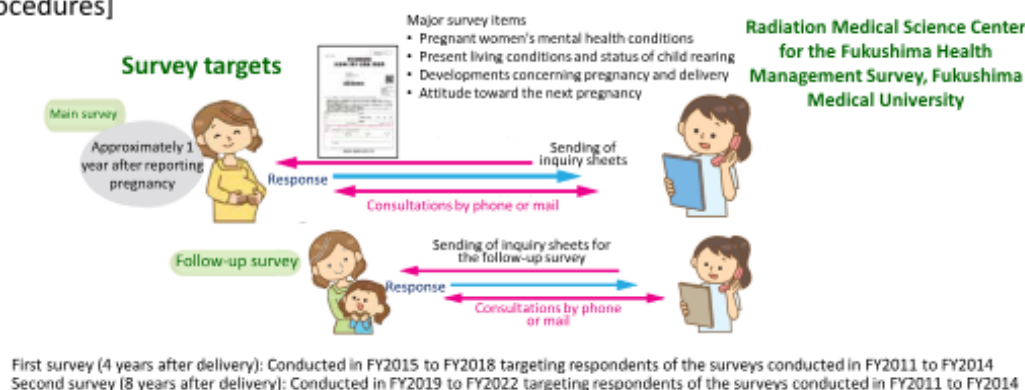
Survey targets are asked to fill in inquiry sheets and send them back. From the FY2016 survey, responses can also be submitted online.

The number of women who become pregnant and give birth in Fukushima Prefecture decreased after the earthquake in FY2012 but temporarily increased in FY2013. However, the number has been on a decline thereafter as seen nationwide.

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## [Survey procedures]



[FY2022 Pregnancy and Birth Survey] Since the FY2016 survey, responses can be submitted online.

- Main survey  
Discontinued with the FY2020 survey
- Second follow-up survey  
FY2014 survey respondents

Prepared based on the leaflet on the Pregnancy and Birth Survey, and the website of the Radiation Medical Science Center for the Fukushima Health Management Survey, Fukushima Medical University

Details of the responses are compiled by the Radiation Medical Science Center for the Fukushima Health Management Survey, Fukushima Medical University, to detect people considered to be in need of support.<sup>1</sup> If there are any people who are considered to be in need of support, midwives, public health nurses, doctors or other specialized staff members offer consultations or other support to such people by mail or by other means.

The main survey was discontinued upon completion of the one conducted in FY2020.

From FY2015, the first follow-up survey to ask about mental and physical health conditions was conducted targeting FY2011 survey respondents (4 years after delivery). Since FY2019, the second follow-up survey has been conducted targeting FY2011 survey respondents (8 years after delivery).

1. Respondents who replied that they tend to feel depressed and that they are not interested in things, or respondents who are considered to be in need of support based on the content of their free remarks (such as those who are in need of help, who are severely depressed, who need support for child rearing, who are worried about radiation doses, or who directly made requests or are requiring concrete answers)

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## [Changes in coverage]

Out of all respondents, for those who were judged to be in need of support from the content of their responses, support has been offered by full-time midwives, etc. by phone or mail.

Fiscal year	Number of people who received support by phone	Percentage of those who received support among all respondents		Number of people who received support by phone	Percentage of those who received support among all respondents		Number of people who received support by phone	Percentage of those who received support among all respondents
FY2011	1,401 people	15.0%	First survey following up the FY2011 survey	375 people	14.7%	Second survey following up the FY2011 survey	421 people	17.9%
FY2012	1,104 people	15.4%	First survey following up the FY2012 survey	256 people	12.7%	Second survey following up the FY2012 survey	386 people	17.7%
FY2013	1,101 people	15.2%	First survey following up the FY2013 survey	393 people	14.5%			
FY2014	830 people	11.6%	First survey following up the FY2014 survey	380 people	14.0%			
FY2015	913 people	13.0%						
FY2016	951 people	13.0%						
FY2017	799 people	12.4%						
FY2018	711 people	10.7%						
FY2019	668 people	10.6%						
FY2020	688 people	10.8%						

## [Topics of the consultations by phone]

Main survey						First follow-up survey		Second follow-up survey		
	FY2011	FY2012	FY2013	FY2014 to FY2017 (the ranking remained unchanged)	FY2018 to FY2019 (the ranking remained unchanged)	FY2020	FY2015 FY2011 survey respondents	FY2016 FY2012 survey respondents	FY2017 to FY2018 (the ranking remained unchanged) FY2013-2014 survey respondents	FY2019 to FY2020 (the ranking remained unchanged) FY2011-2012 survey respondents
1st	Worries over radiation and its effects	Mothers' mental and physical health	Mothers' mental and physical health	Mothers' mental and physical health	Mothers' mental and physical health	Matters concerning child rearing	Mothers' mental and physical health	Mothers' mental and physical health	Mothers' mental and physical health	Mothers' mental and physical health
2nd	Mothers' mental and physical health	Matters concerning child rearing	Matters concerning child rearing	Matters concerning child rearing	Matters concerning child rearing	Mothers' mental and physical health	Worries over radiation and its effects	Matters concerning child rearing	Matters concerning child rearing	Matters concerning child rearing
3rd	Matters concerning child rearing	Worries over radiation and its effects	Children's mental and physical health	Matters concerning family life	Children's mental and physical health	Matters concerning family life	Matters concerning child rearing	Children's mental and physical health	Matters concerning family life	Children's mental and physical health
Matters concerning child rearing include concerns about baby food, night crying, constipation, vaccination, etc.						Prepared based on the material for the 44th Prefectural Oversight Committee Meeting for Fukushima Health Management Survey				

Immediately after the earthquake, the most frequent topic was worries over radiation and its effects, but the percentage of such consultations is declining over time. Since FY2012, consultations on mothers' mental and physical health and matters concerning child rearing have increased and now rank high.

The percentage of people requiring support found in the main survey has been gradually decreasing.

From the follow-up surveys in FY2013 onward, support was expanded to cover those considered to be in need of support based on the content of their free comments. Accordingly, the percentage of those requiring support found in the first follow-up survey continued to be around 14%.

The percentage of those requiring support found in the second follow-up survey was the highest.

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**[Percentages of premature births, low birth-weight babies, and congenital abnormalities or anomalies]**

Percentages of premature births, low birth-weight babies, and congenital abnormalities or anomalies obtained through the Pregnancy and Birth Survey were almost the same as the general level and those obtained through nationwide surveys.

	Percentage of premature births (%)		Percentage of low birth-weight babies (%)		Percentage of congenital abnormalities or anomalies (%)	
	Main survey*	Nationwide survey	Main survey*	Nationwide survey	Main survey	General level
FY2011	4.6	5.7	8.6	9.6	2.85	
FY2012	5.6	5.7	9.2	9.6	2.39	
FY2013	5.2	5.8	9.6	9.6	2.35	
FY2014	5.3	5.7	9.8	9.5	2.30	
FY2015	5.6	5.6	9.4	9.5	2.24	
FY2016	5.3	5.6	9.2	9.4	2.55	
FY2017	5.3	5.7	9.2	9.4	2.38	
FY2018	5.2	5.6	9.0	9.4	2.19	
FY2019	5.1	5.6	9.1	9.4	2.71	
FY2020	4.4	5.5	8.1	9.2	2.21	

\* As percentages are retabulated by excluding cases of dead births, values differ from those in the reports on the surveys in FY2011 to FY2018.  
 Premature births: Babies born at a gestational age from 22 weeks to less than 37 weeks  
 Low birth-weight babies: Babies born smaller than 2500g  
 Nationwide surveys: Annual percentages based on the Vital Statistics

Prepared based on the material for the 44th Prefectural Oversight Committee Meeting for Fukushima Health Management Survey

Radiation effects on newborn babies had been worried about, but the percentages of premature births, low birth-weight babies, and congenital abnormalities or anomalies in Fukushima Prefecture after the earthquake were found to be almost the same as generally available data, including Vital Statistics collected nationally.

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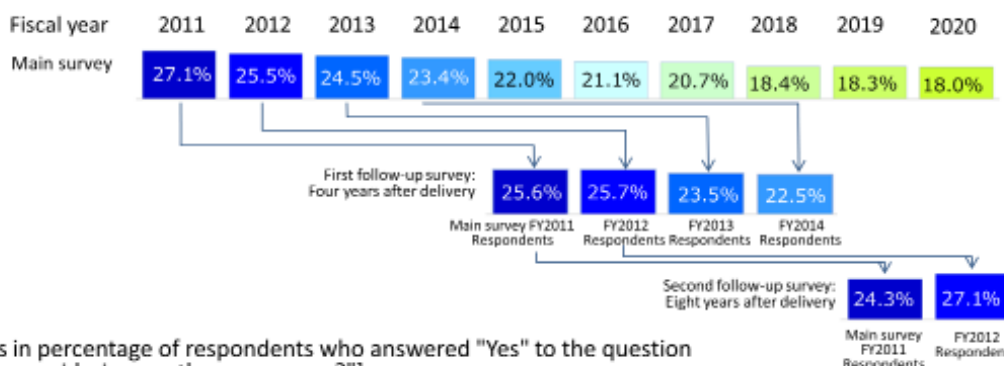
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[Changes in pregnant women's depressive tendencies]

The percentage of respondents who replied that they tend to feel depressed and/or that they are not interested in things

Pregnant women's depressive tendencies have been decreasing gradually, but those who gave birth within one to two years after the earthquake showed higher depressive tendencies even after four years compared with those who gave birth later.



[Changes in percentage of respondents who answered "Yes" to the question "Are you considering another pregnancy?"]

Nationwide survey		Main survey								
FY2010	FY2015	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
51.0%	50.0%	52.9%	52.8%	57.1%	53.3%	54.6%	52.4%	52.2%	51.3%	50.0%

Nationwide survey 2010 : Percentage of respondents who are married for less than 10 years and plan to have a child in the nationwide survey, "Fourteenth Japanese National Fertility Survey in 2010" (when having any children already)

Nationwide survey 2015 : Percentage of respondents who are married for less than 10 years and plan to have a child in the nationwide survey, "Fifteenth Japanese National Fertility Survey in 2015" (when having any children already)

\* The 2011 survey did not contain the relevant question.

Prepared based on the material for the 44th Prefectural Oversight Committee Meeting for Fukushima Health Management Survey

For questions concerning pregnant women's depressive tendencies, respondents who replied that they tend to feel depressed and/or that they are not interested in things have been decreasing. However, those who gave birth within one to two years after the earthquake showed higher depressive tendencies even after four years compared with those who gave birth later.

According to the "Healthy Parents and Children 21" (a national campaign to promote improvement of health standards of mothers and children), the percentage of postnatal depression evaluated using the Edinburgh Postnatal Depression Scale was 8.4% in FY2013 and 9.8% in FY2017 nationwide. The percentage estimated from the results of the FY2020 Pregnancy and Birth Survey was 10.0% (reference used for the calculation: Mishina H, et al. *Pediatr Int.* 2009; 51: 48).

The FY2020 Pregnancy and Birth Survey also revealed that respondents considering another pregnancy accounted for 50.0%. Since the FY2012 survey, more than half of the respondents wish to have more children. For reference, respondents who have been married for less than ten years and plan to have a child accounted for 60% (or 51% among those who already have any children) in the Fourteenth Japanese National Fertility Survey in 2010 and 57% (or 50% among those who already have any children) in the Fifteenth Japanese National Fertility Survey in 2015.

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