

We Didn't Start the Fire

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If you remember the song by Billy Joel, you might just recall the line, "children of thalidomide." While you may have sung the words, it's unlikely you understood the reference unless you are closer to my age.

Thalidomide was a wonder drug developed by a German drug company in 1954. It was initially marketed to treat headaches and depression, but was ultimately found to cause irreversible peripheral neuropathy. It was then remarketed to pregnant women to combat morning sickness and other effects of pregnancy. The results were far more disastrous, as their children were born with various deformities that included substantial shortening or absence of their arms, legs or both. It also caused deformities of the eyes and ears (including deafness), cardiovascular system, gastrointestinal tract and kidneys.

Thalidomide was sold until 1962, long after these side effects were presented in the scientific literature. According to [the Thalidomide Society](#): "There is no absolute figure for how many babies were affected by thalidomide as many were miscarried, still-born or died soon after birth. It has most recently been estimated that over 24,000 babies were born worldwide of which 2000 were born in the UK. In addition, based on medical evidence, experts conservatively estimate that those babies still-born and miscarried, due to thalidomide, would add a further 123,000 worldwide of which 10,000 would have been in the UK."¹

Is History Repeating Itself?

Information provided in two recent reports may be the foreshadowing of history repeating itself. A 2016 study revealed that almost one in 20 pregnant women in the U.S. used marijuana in the past month - an increase of more than 44 percent from the prior year. This is partially due to aggressive marketing of marijuana by dispensaries as a solution to morning sickness.

But research has demonstrated that THC can easily reach the baby through the placenta and accumulate in the developing brain. A recent [clinical report](#) from the American Academy of Pediatrics provides a profile from two longitudinal studies (the OPPS and the MHPCD) that describe the potential impact on prenatally exposed individuals:²

- Beginning at 9 months - impaired mental development
- Beginning at age 4 - lower verbal reasoning and memory scores; executive function deficits
- Beginning at age 6 - deficits in language comprehension, memory, visual and perceptive function; increased impulsivity and hyperactivity
- Ages 9-12 - deficits in executive function, impulse control and visual problem solving; increased hyperactivity, impulsivity and inattention
- Ages 13-16 - problems with attention, problem solving, visual integration and analytical skills
- Ages 16-21 - higher rates of depression

The report warns that "the potency of marijuana now routinely available is much higher than what

was available a decade ago. The potency of THC in samples studied in 1983 averaged 3.2%, and the average in 2008 was 13.2%; the authors of that same study identified isolated samples with THC contents as high as 27.3% and 37.2%. These higher potencies as well as new practices of marijuana use, such as dabbing or vaping, can significantly increase the concentration of THC being consumed. Studies have revealed that the development of marijuana strains with higher THC concentrations has reduced the concentration of cannabidiol, possibly decreasing the medicinal benefits for a select number of conditions. There are many other substances contained in the marijuana plant in addition to THC and cannabidiol about which little is known. Additionally, marijuana is often grown with the use of pesticides, herbicides, rodenticides, and fertilizers, many of which are toxic. Exposure to marijuana may also expose the fetus and infant to these toxins."

In addition to the above clinical report, the August 2018 issue of *Pediatrics* contains [a study](#) on how maternal marijuana use can pollute breast milk with concentrations of THC:³

- THC was detectable in 34 (63%) of the 54 samples up to approximately six days after last reported use.
- The number of hours since last use was a significant predictor of THC concentrations.
- The number of daily uses and time from sample collection to analysis were also significant predictors of THC concentrations.

Other studies cited suggest THC accumulates in breast milk, and infants absorb and metabolize the THC in the breast milk. The authors warn that "because the brain rapidly develops during the time period when, ideally, a child's main source of nutrition is human milk, brain development may be altered by Δ^9 -THC exposure. Authors of previous studies have suggested that prenatal exposure to cannabis may interfere with brain development resulting in deficits in cognitive and behavioral function."

Federal law still classifies marijuana as a Schedule 1 drug with a potential for abuse, but no approved medical use. This means research is very limited. Some of the research people rely on for safety was conducted decades ago when the concentration of THC was much lower.

A good [summary article](#) on this issue was published in *Kaiser Health News*.⁴ You may want to give it a quick read and share it with your patients. You can also share my article with them.

The Bottom Line Is Simple

The little research we have suggests maternal marijuana use is harmful to children up through adulthood. Ignoring this fact makes your patients and their unborn children at risk of potentially dire, lifelong side effects to be discovered decades from now. Please share this information with patients and make sure they know: We didn't start the fire.

References

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4. Gold J. "Pediatricians Put It Bluntly: Motherhood and Marijuana Don't Mix." *Kaiser Health*

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