

# Impact of torture, long-term psychological scars

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At times, waterboarding rendered al-Qaida terror suspect Abu Zubaydah hysterical. But later, a message to CIA headquarters described an interrogator merely lifting his eyebrow and snapping his fingers, and Zubaydah "slowly walked on his own to the water table" to lie down.

The Senate's torture report describes how the CIA's harsh interrogation program sought to make detainees passive and powerless to resist, using techniques from sleep deprivation to stress positions to waterboarding to induce a state that psychologists call "learned helplessness."  
"Compliant," was the interrogators' description of Zubaydah.

Whatever it's labeled, specialists say the brain clearly can become conditioned by extreme fear and stress, notwithstanding CIA assertions that what was done would not cause any permanent mental or physical harm.

In that Senate report are "dramatic examples that clearly indicate that people are going to be damaged psychologically for a very long time," said Dr. Vincent Iacopino, an adviser to the non-profit Physicians for Human Rights who has long treated survivors of torture from around the world.

He ticked off a list: Post-traumatic stress disorder, other anxiety disorders, depression and enduring personality changes.

What happens in the brain? Clues come from studies of things like

memory formation and stress—not torture—in animals. For example, repeated moderately stressful experiences, such as restraining a rat's movements over a period of time, can physically alter structures that control fear and anxiety, said neuroscientist Bruce McEwen of Rockefeller University.

While some changes are reversible, "the brain is never the same as it was before," said McEwen, who studies the effects of chronic stress.

In fact, enough stress and trauma can damage memory systems, he added. Reflecting on news accounts of the torture, he said he was struck that "it's sort of counterproductive" when trying to get people to remember things.

The concept of learned helplessness stemmed from experiments in the late 1960s that influenced depression research: Dogs were given mild jolts of electricity that they couldn't avoid. Then they were put in a divided box where they could escape more zaps by jumping to the other side, but they didn't try. They'd been conditioned to accept their fate.

Fast forward a few decades. Last week's Senate investigation into the CIA's interrogation of suspected terrorists called that research a model for two contract psychologists who helped design the program.

Physical torture can affect the brain, too. But by itself, "psychological torture undermines the very ability to think, and it doesn't leave any marks," said psychologist Steven Reisner, a co-founder of the Council for Ethical Psychology, who has criticized health providers' involvement in the interrogations.

Even a few days of [sleep deprivation](#) fog the mind, he noted, while sensory deprivation can lead to hallucinations and other symptoms of psychosis.

Humiliation adds powerfully to the sense of being out of control. Stress positions, such as shackling hands over the head, mean a shift can bring pain or punishment, until "the mind begins to turn against itself, blaming itself for not following the exact order of the torturer," Reisner said.

The Senate report said accused 9/11 attacks facilitator Ramzi bin al-Shibh was repeatedly shackled nude, kept in stress positions and physically abused and "kept in total darkness to heighten his sense of fear" for weeks at a time. In 2005, a CIA psychologist wrote that al-Shibh had "remained in social isolation" for 2½ years and was having "alarming" psychological deterioration, including visions, paranoia, insomnia and attempts at self-harm. He was transferred to Guantanamo Bay, Cuba, and placed on anti-psychotic medications.

Longer term, disorders such as PTSD involve flashbacks and nightmares stemming from how the brain processes traumatic situations.

"It's clear that fear-related memories are deeply embedded," said Rockefeller's McEwen.

Animal studies show brain chemicals released in the emotional rush help a traumatic experience take root, explained neuroscientist Joseph LeDoux of New York University. The amygdala, your brain's threat detector, absorbs the details so that later, something in the environment can subconsciously trigger an alarm—maybe a car backfiring that reminds it of a gunshot—and once again cause anxiety.

At the same time, [chronic stress](#) such as from PTSD can shrink regions involved with memory and attention that usually moderate fear responses, McEwen added, making it harder to put that car backfire into context and calm down.

"These kinds of health issues can go on for years and years," said Dr.

Allen Keller, director of the Bellevue Hospital/NYU Program for Survivors of Torture, who said he has evaluated some terror detainees who were released.

Survivors have to feel safe enough to seek mental health treatments.

"There's nothing we can do to undo what happened, but there's a lot we can do to help individuals rebuild their lives," he said.

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