2021 PEW RESEARCH CENTER'S AMERICAN TRENDS PANEL WAVE 99 NOVEMBER 2021 TOPLINE NOVEMBER 1-7, 2021 N=10,260

NOTE: ALL NUMBERS ARE PERCENTAGES UNLESS OTHERWISE NOTED. THE PERCENTAGES LESS THAN 0.5% ARE REPLACED BY AN ASTERISK (*). ROWS/COLUMNS MAY NOT TOTAL 100% DUE TO ROUNDING.

Wargin of error at 95%
Sample size
U.S. adults

Margin of error at 95%
confidence level
+/- 1.6 percentage points

ASK FORM 1 ONLY [XFORM=1] [N=5,153]:

TECH1 Overall, would you say technology has had a mostly positive effect on our society or a mostly negative effect on our society?

Nov 1-7, 2021		<u>Mar 2-28, 2016</u>
48	Mostly positive	52
11	Mostly negative	8
41	Equal positive and negative effects	38
*	No answer	2

ASK FORM 2 ONLY [XFORM=2] [N=5,107]:

SCI1 Overall, would you say science has had a mostly positive effect on our society or a mostly negative effect on our society?

		Feb 16-21,	Jan 7-21,	Mar 2-28,
Nov 1-7, 2021		<u>2021</u>	<u>2019</u>	<u>2016</u>
65	Mostly positive	67	73	67
7	Mostly negative	6	3	4
28	Equal positive and negative effects	27	23	27
*	No answer	1	*	2

ASK ALL:

CNCEXC

Artificial intelligence computer programs are designed to learn tasks that humans typically do, for instance recognizing speech or pictures. Overall, would you say the increased use of artificial intelligence computer programs in daily life makes you feel... [RANDOMIZE RESPONSE OPTIONS 1 AND 2, WITH OPTION 3 ALWAYS LAST]

Nov 1-7, 2021	
18	More excited than concerned
37	More concerned than excited
45	Equally concerned and excited
*	No answer

ASK IF MORE EXCITED ABOUT AI [CNCEXC=1]:

EXCITEOE

What is the main reason you are more excited than concerned about the increased use of artificial intelligence computer programs in daily life? [OPEN-END RESPONSE, CODED ANSWERS SHOWN BELOW]

Nov 1-7, 2021	
31	Makes life, society better
13	Saves time, more efficient
10	Inevitable progress, is the future
7	Handles mundane, tedious tasks
6	Helps with work/labor
6	AI is interesting, exciting
6	Helps humans with difficult/dangerous tasks
4	More accurate than humans
4	Helps those who are elderly/have a disability
2	Personal anecdotes
2	Other people's fears are based on sci-fi, not reality
7	Other
22	No answer

ASK IF MORE CONCERNED ABOUT AI [CNCEXC=2]:

CONCERNOE

What is the main reason you are more concerned than excited about the increased use of artificial intelligence computer programs in daily life? [OPEN-END RESPONSE, CODED ANSWERS SHOWN BELOW]

Nov 1-7, 2021	
19	Loss of human jobs
16	Surveillance, hacking, digital privacy
12	Lack of human connection, qualities
8	AI will get too powerful, outsmarting people
8	People misusing AI
7	People becoming too reliant on AI/tech
6	AI fails, makes mistakes
3	Concerns about govt./tech companies using AI
3	Don't trust AI or people wielding it
2	Unforeseen consequences/effects
2	Loss of freedom
2	Human bias coded into AI
2	Lack of oversight and regulation
7	Other
20	No answer

ASK ALL:

ALGFAIR

Do you think it is possible or not possible for people to design artificial intelligence computer programs that can consistently make fair decisions in complex situations?

Nov 1-7, 2021	
30	Possible
28	Not possible
41	Not sure
1	No answer

ASK ALL:

DISCRIM1

Thinking about the people who design artificial intelligence computer programs, how well do you think they take into account the experiences and views of each of the following? [RANDOMIZE a-d AND e-f IN BLOCKS; RANDOMIZE ORDER OF BLOCKS; SHOW BLOCKS ON SEPARATE PAGES]

	NA/leike a divike	Very well	Somewhat <u>well</u>	Not too <u>well</u>	Not at all <u>well</u>	Not sure	No <u>answer</u>
a.	White adults Nov 1-7, 2021	23	25	8	5	39	1
b.	Black adults Nov 1-7, 2021	7	18	20	12	42	1
c.	Hispanic adults Nov 1-7, 2021	6	17	23	10	43	1
d.	Asian adults Nov 1-7, 2021	10	23	15	8	43	1
e.	Men Nov 1-7, 2021	23	28	7	4	37	1
f.	Women Nov 1-7, 2021	9	27	18	7	38	1

ASK ALL:

POSNEGAI

How excited or concerned would you be if artificial intelligence computer programs could do each of the following? **[RANDOMIZE ITEMS]**

a.	Know people's thoughts and	Very <u>excited</u>	Somewhat <u>excited</u>	Equal excitement and <u>concern</u>	Somewhat concerned	Very concerned	No <u>answer</u>
	behaviors Nov 1-7, 2021	3	6	16	23	52	*
b.	Perform household chores Nov 1-7, 2021	26	31	24	12	7	1
c.	Make important life decisions for people Nov 1-7, 2021	4	6	16	23	52	*
d.	Diagnose medical problems Nov 1-7, 2021	20	20	24	16	19	*
e.	Perform repetitive workplace tasks Nov 1-7, 2021	20	27	27	16	10	1
f.	Handle customer service calls Nov 1-7, 2021	9	18	26	28	19	1

ASK ALL:

POSNEGHE

How excited or concerned would you be about potential new techniques that could change human abilities in the following ways? **[RANDOMIZE ITEMS]**

		Very <u>excited</u>	Somewhat <u>excited</u>	Equal excitement and <u>concern</u>	Somewhat concerned	Very concerned	No <u>answer</u>
a.	Slow the aging process to allow the average person to live decades longer Nov 1-7, 2021	22	19	30	16	13	1
b.	Allow some people to far more quickly and accurately process information Nov 1-7, 2021	21	26	30	13	10	1
c.	Prevent some people from getting serious diseases or health conditions Nov 1-7, 2021	41	26	22	6	5	1
d.	Allow some people greatly increased strength for lifting heavy objects Nov 1-7, 2021	19	25	28	16	11	1
e.	Allow some people to see shapes and patterns in crowded spaces far beyond what the typical person can see today Nov 1-7, 2021	16	25	31	16	11	1
f.	Allow some people to hear sounds far beyond what the typical person can hear today						
	Nov 1-7, 2021	20	27	29	14	10	*

[PROGRAMMING NOTE: ASK BLOCKS 1-3 IF FORM 1; RANDOMIZE ORDER OF BLOCKS]

BLOCK 1

ASK FORM 1 ONLY [XFORM=1] [N=5,153]:

SMALGVIG

Computer programs can be trained to review large amounts of information and learn to identify patterns. These programs, called algorithms, are widely used by social media companies to find false information about important topics that appears on their sites.

ASK FORM 1 ONLY [XFORM=1] [N=5,153]:

SMALG1

How much have you heard or read about computer programs used by social media companies to find false information on their sites?

<u>Nov 1-7, 2021</u>	
24	A lot
51	A little
24	Nothing at all
*	No answer

ASK FORM 1 ONLY [XFORM=1] [N=5,153]:

SMALG2

Do you think widespread use of computer programs by social media companies to find false information on their sites has been a...

Nov 1-7, 2021	
38	Good idea for society
31	Bad idea for society
30	Not sure
*	No answer

ASK FORM 1 INTERNET USERS ONLY [XFORM=1 AND XTABLET=2] [N=5,057]:

SMALG3 Have you ever seen information on social media sites that has been flagged or labeled as false?

Nov 1-7, 2021	
63	Yes, I have
22	No, I have not
13	I don't use social media sites
1	No answer

ASK FORM 1 ONLY [XFORM=1] [N=5,153]:

SMALG3GP Have you ever seen information on social media sites that has been flagged or labeled as false?

Nov 1-7, 2021	
61	Yes, I have
22	No, I have not
13	I don't use social media sites
1	No answer
4	Does not use internet

SMALG4 Do you think widespread use of computer programs by social media companies to find false information is making the following happen on their sites? **[RANDOMIZE ITEMS]**

a.	News and information	Definitely happening	Probably <u>happening</u>	Probably NOT <u>happening</u>	Definitely NOT <u>happening</u>	No answer
	are being wrongly removed Nov 1-7, 2021	29	39	24	6	2
b.	Political viewpoints are being censored Nov 1-7, 2021	36	34	21	8	1
c.	It is getting easier to find trustworthy information Nov 1-7, 2021	10	30	36	23	2
d.	It is allowing people to have more meaningful conversations Nov 1-7, 2021	7	28	40	23	2

ASK FORM 1 ONLY [XFORM=1] [N=5,153]:

SMALG5 How much control do you think users have over the things they see on social media sites?

Nov 1-7, 2021	
10	A lot of control
48	A little control
33	No control
8	Not sure
*	No answer

ASK FORM 1 ONLY [XFORM=1] [N=5,153]:

SMALG6 Which comes closer to your view, even if neither is exactly right?

When using computer programs to find false information on their sites, social media companies should give priority to... **[RANDOMIZE RESPONSE OPTIONS]**

Nov 1-7, 2021	
28	Quick decisions, even if some accurate information gets mistakenly removed
	Accurate decisions, even if some false information stays up on sites for a longer
69	period of time
3	No answer

SMALG7

How much confidence do you have that social media companies will use computer programs appropriately to determine which information on their sites is false?

Nov 1-7, 2021	
3	A great deal of confidence
24	A fair amount of confidence
43	Not too much confidence
30	No confidence at all
1	No answer

ASK FORM 1 ONLY [XFORM=1] [N=5,153]:

SMALG8

As the use of computer programs by social media companies to find false information on their sites has become widespread, which is your greater concern? **[RANDOMIZE RESPONSE OPTIONS]**

Nov 1-7, 2021	
44	Government will go too far regulating their use
53	Government will not go far enough regulating their use
3	No answer

ASK FORM 1 ONLY [XFORM=1] [N=5,153]:

SMALG9

How much of a role do you think each of the following groups should play in setting standards for how social media companies use computer programs to find false information on their sites? **[RANDOMIZE ITEMS]**

		A major role	A minor role	No role at all	No answer
a.	Federal government agencies Nov 1-7, 2021	40	39	19	1
b.	The social media companies that develop these computer programs Nov 1-7, 2021	51	35	13	1
c.	Social media users Nov 1-7, 2021	46	38	14	1

ASK FORM 1 ONLY [XFORM=1] [N=5,153]:

SMALG10 When creating computer programs to find false information, how important do you think it is for social media companies to include people of different... **[RANDOMIZE ITEMS]**

		Extremely important	Very <u>important</u>	Somewhat <u>important</u>	A little <u>important</u>	Not at all important	No <u>answer</u>
a.	Genders Nov 1-7, 2021	39	24	18	5	13	2
b.	Racial and ethnic groups						
	Nov 1-7, 2021	42	25	17	3	11	1
c.	Political viewpoints Nov 1-7, 2021	37	27	18	5	10	1

SMALG11 Do you think the decisions made by social media companies about what information is false should be... [RANDOMIZE RESPONSE OPTIONS 1 AND 2, WITH OPTIONS 3

AND 4 ALWAYS LAST]

Nov 1-7, 2021	
21	Mostly made by people
6	Mostly made by computer programs
57	A mix of both people and computer programs
14	Not sure
1	No answer

ASK FORM 1 ONLY [XFORM=1] [N=5,153]:

SMALG12 When it comes to finding false information on their sites, do you think computer programs used by social media companies do... [RANDOMIZE RESPONSE OPTIONS 1 AND 2, WITH OPTIONS 3 AND 4 ALWAYS LAST]

Nov 1-7, 2021	
19	A better job than humans
22	A worse job than humans
25	About the same job as humans
32	Not sure
2	No answer

ASK FORM 1 ONLY [XFORM=1] [N=5,153]:

SMALG13 Computer programs like the ones used by social media companies to find false information could be used for a number of purposes. Would you favor or oppose the use of computer programs to make final decisions about each of the following?

[RANDOMIZE ITEMS]

		<u>Favor</u>	<u>Oppose</u>	Not sure	No answer
a.	Which people should be approved for mortgages Nov 1-7, 2021	21	56	22	1
b.	Which patients should get a medical treatment Nov 1-7, 2021	12	70	17	*
c.	Which job applicants should move on to a next round of interviews Nov 1-7, 2021	18	60	21	1
d.	Which people should be good candidates for parole Nov 1-7, 2021	13	64	23	1

[PROGRAMMING NOTE: ASK BLOCKS 1-3 IF FORM 1; RANDOMIZE ORDER OF BLOCKS]

BLOCK 2

ASK FORM 1 ONLY [XFORM=1] [N=5,153]:

FACERECVIG Facial recognition technology can identify someone by scanning their face in photos, videos or in real time. This technology could be used by police to look for people who may have committed a crime or monitor crowds in public spaces.

ASK FORM 1 ONLY [XFORM=1] [N=5,153]:

FACEREC1 How much have you heard or read about facial recognition technology by police?

Nov 1-7, 2021	
21	A lot
58	A little
20	Nothing at all
*	No answer

ASK FORM 1 ONLY [XFORM=1] [N=5,153]:

FACEREC2 Do you think the widespread use of facial recognition technology by police would be a...

Nov 1-7, 2021	
46	Good idea for society
27	Bad idea for society
27	Not sure
*	No answer

FACEREC3 If the use of facial recognition technology by police becomes widespread, do you think each of the following would happen? The police would... [RANDOMIZE ITEMS]

		Definitely would <u>happen</u>	Probably would <u>happen</u>	Probably would NOT <u>happen</u>	Definitely would NOT <u>happen</u>	No answer
a.	Make more false arrests Nov 1-7, 2021	16	38	40	5	2
b.	Solve crimes more quickly and efficiently					
c.	Nov 1-7, 2021 Use the technology to	18	55	21	4	1
	monitor Black and Hispanic neighborhoods much more often than other neighborhoods					
	Nov 1-7, 2021	26	40	24	8	2
d.	Find more missing persons Nov 1-7, 2021	21	57	18	2	1
e.	Be able to track everyone's location at all times	0.7				
_	Nov 1-7, 2021	27	42	24	6	1
f.	Be better able to keep crowds under control Nov 1-7, 2021	12	37	43	7	1

ASK FORM 1 ONLY [XFORM=1] [N=5,153]:

FACEREC4

Do you think the widespread use of facial recognition technology by police will make policing... [RANDOMIZE RESPONSE OPTIONS 1 AND 2, WITH OPTION 3 ALWAYS LAST]

Nov 1-7, 2021	
34	More fair
25	Less fair
40	Not make much difference
1	No answer

FACEREC5

If the use of facial recognition technology by police becomes widespread, do you think crime would... [RANDOMIZE RESPONSE OPTIONS 1 AND 2, WITH OPTION 3 **ALWAYS LAST]**

Nov 1-7, 2021	
8	Increase in the U.S.
33	Decrease in the U.S.
57	Stay about the same
3	No answer

ASK FORM 1 ONLY [XFORM=1] [N=5,153]:

FACEREC6

How much of a role do you think each of the following groups should have in setting standards for how facial recognition technology is used by police? [RANDOMIZE ITEMS]

_	Fodoral government	A major role	A minor role	No role at all	No answer
a.	Federal government agencies Nov 1-7, 2021	49	36	14	1
b.	Companies that develop facial recognition technology				
	Nov 1-7, 2021	41	38	20	1
c.	Ordinary people Nov 1-7, 2021	40	38	21	1
d.	Police departments that use facial recognition technology				
	Nov 1-7, 2021	51	37	11	1

ASK FORM 1 ONLY [XFORM=1] [N=5,153]:

FACEREC7

If the use of facial recognition technology by police becomes widespread, which is your greater concern? [RANDOMIZE RESPONSE OPTIONS]

Nov 1-7, 2021	
47	Government will go too far regulating its use
51	Government will not go far enough regulating its use
2	No answer

FACEREC8 Would the use of facial recognition technology by police be more acceptable, less acceptable or would it make no difference if... **[RANDOMIZE ITEMS]**

		More <u>acceptable</u>	Less <u>acceptable</u>	No difference	No answer
a.	People without criminal records could opt-out of facial recognition databases Nov 1-7, 2021	45	26	28	2
b.	People were notified of the public events and public spaces that were scanned for facial images Nov 1-7, 2021	53	18	28	2
C.	Police officers were trained in how facial recognition systems can make errors in identifying people before they use it Nov 1-7, 2021	64	11	23	1

ASK FORM 1 ONLY [XFORM=1] [N=5,153]:

FACEREC9 Which of the following statements best describes your views, even if neither is exactly right? [RANDOMIZE RESPONSE OPTIONS]

Nov 1-7, 2021	
60	People should assume they are being monitored when they are in public spaces
39	People should have a right to privacy when they are in public spaces
1	No answer

ASK FORM 1 ONLY [XFORM=1] [N=5,153]:

FACEREC10 If a facial recognition program said that someone was involved in a crime, should that be good enough evidence for police to arrest them, even if there was a small chance the program was wrong?

Nov 1-7, 2021	
27	Yes
70	No
2	No answer

FACEREC11 Would you consider each of the following uses of facial recognition technology by police to be acceptable or not acceptable? Scanning people ... **[RANDOMIZE ITEMS]**

		<u>Acceptable</u>	Not acceptable	No answer
a.	At public protests Nov 1-7, 2021	61	38	1
b.	As they enter large events like concerts to see who is in the crowd Nov 1-7, 2021	63	36	1
c.	As they walk down the street Nov 1-7, 2021	31	68	1

ASK FORM 1 ONLY [XFORM=1] [N=5,153]:

FACEREC12 Facial recognition technology could be used for a number of purposes. Would you favor or oppose the use of facial recognition technology for each of the following purposes? [RANDOMIZE ITEMS]

		<u>Favor</u>	<u>Oppose</u>	Not sure	No answer
a.	Companies automatically tracking the attendance of their employees Nov 1-7, 2021	30	48	22	1
b.	Social media sites automatically identifying people in photos Nov 1-7, 2021	19	57	23	1
C.	Retail stores enhancing credit card payment security by confirming account holders at checkout Nov 1-7, 2021	53	26	21	1
d.	Apartment buildings tracking who enters or leaves their buildings Nov 1-7, 2021	51	30	18	1

[PROGRAMMING NOTE: ASK BLOCKS 1-3 IF FORM 1; RANDOMIZE ORDER OF BLOCKS]

BLOCK 3

ASK FORM 1 ONLY [XFORM=1] [N=5,153]:

DCCARSVIG Driverless passenger vehicles, sometimes called self-driving cars, are equipped with software allowing them to operate with computer assistance. In the future, driverless passenger vehicles are expected to be able to operate entirely on their own without a human driver.

DCARS1 How much have you heard or read about driverless passenger vehicles?

Nov 1-7, 2021	
26	A lot
62	A little
12	Nothing at all
*	No answer

ASK FORM 1 ONLY [XFORM=1] [N=5,153]:

DCARS2 Do you think widespread use of driverless passenger vehicles would be a...

Nov 1-7, 2021	
26	Good idea for society
44	Bad idea for society
29	Not sure
*	No answer

ASK FORM 1 ONLY [XFORM=1] [N=5,153]:

DCARS3 Would you personally want to ride in a driverless passenger vehicle, if you had the opportunity?

Nov 1-7, 2021	
14	Definitely want
23	Probably want
32	Probably NOT want
30	Definitely NOT want
1	No answer

DCARS4

If the use of driverless passenger vehicles becomes widespread, do you think each of the following would happen? **[RANDOMIZE ITEMS]**

		Definitely would happen	Probably would happen	Probably would NOT <u>happen</u>	Definitely would NOT happen	No answer
a.	Older adults and people with disabilities will be able to live more independently Nov 1-7, 2021	22	49	23	5	1
b.	Many people who make their living by driving others or delivering things with passenger vehicles would lose their jobs Nov 1-7, 2021	37	46	13	3	*
C.	Getting from place to place would be less stressful Nov 1-7, 2021	16	40	33	10	1
d.	The computer systems in driverless passenger vehicles would be easily hacked in ways that put safety at risk Nov 1-7, 2021	25	51	20	3	1

ASK FORM 1 ONLY [XFORM=1] [N=5,153]:

DCARS5

If the use of driverless passenger vehicles becomes widespread, do you think that would... [RANDOMIZE RESPONSE OPTIONS 1 AND 2, WITH OPTION 3 ALWAYS LAST; USE SAME ORDER FOR DCARS6]

Nov 1-7, 2021	
46	Increase the gap between higher and lower-income Americans
8	Decrease the gap between higher and lower-income Americans
46	Not make much difference
1	No answer

ASK FORM 1 ONLY [XFORM=1] [N=5,153]:

DCARS6

If the use of driverless passenger vehicles becomes widespread, do you think that would... [RANDOMIZE RESPONSE OPTIONS 1 AND 2, WITH OPTION 3 ALWAYS LAST; USE SAME ORDER FOR DCARS5]

<u>Nov 1-7, 2021</u>	
27	Increase the number of people killed or injured in traffic accidents
39	Decrease the number of people killed or injured in traffic accidents
31	Not make much difference
3	No answer

DCARS7

In the case of an unavoidable accident, should the computer systems guiding driverless vehicles be designed to prioritize the safety of... [RANDOMIZE RESPONSE OPTIONS 1 AND 2, WITH OPTION 3 ALWAYS LAST]

Nov 1-7, 2021	
40	The vehicle's passengers
18	Those outside of the vehicle
41	Not sure
1	No answer

ASK FORM 1 ONLY [XFORM=1] [N=5,153]:

DCARS8

How much of a role do you think each of the following groups should have in setting standards for how driverless passenger vehicles are used? **[RANDOMIZE ITEMS]**

	Endougle community and a second	A major role	A minor role	No role at all	No answer
a.	Federal government agencies Nov 1-7, 2021	53	32	14	1
b.	The companies that develop driverless passenger vehicles Nov 1-7, 2021	62	29	8	1
c.	The people who use driverless passenger vehicles Nov 1-7, 2021	54	33	12	1
d.	The dealerships that sell driverless passenger vehicles Nov 1-7, 2021	25	37	36	1

ASK FORM 1 ONLY [XFORM=1] [N=5,153]:

DCARS9 If the use of driverless passenger vehicles becomes widespread, which is your greater concern? [RANDOMIZE RESPONSE OPTIONS]

Nov 1-7, 2021	
43	Government will go too far regulating their use
55	Government will not go far enough regulating their use
3	No answer

ASK FORM 1 ONLY [XFORM=1] [N=5,153]:

DCARS10

Which statement comes closer to your view when it comes to ensuring the safety and effectiveness of driverless passenger vehicles? [RANDOMIZE RESPONSE OPTIONS]

Driverless passenger vehicles should be tested using...

Nov 1-7, 2021	
11	Existing standards used for regular passenger vehicles
87	A higher standard than used for regular passenger vehicle
1	No answer

DCARS11 Would the use of driverless passenger vehicles be more acceptable, less acceptable or would it make no difference in each of the following circumstances? [RANDOMIZE ITEMS]

		More <u>acceptable</u>	Less <u>acceptable</u>	No difference	No answer
a.	They were required to travel in dedicated lanes Nov 1-7, 2021	67	10	22	1
b.	They were required to be labeled as driverless in order to be easily identified Nov 1-7, 2021	70	7	22	1
C.	If regular reports about the number of accidents caused by them were required Nov 1-7, 2021	71	10	18	1
d.	If someone in the vehicle was required to have a driver's license Nov 1-7, 2021	57	9	33	1

ASK FORM 1 ONLY [XFORM=1] [N=5,153]:

DCARS12 If the use of driverless passenger vehicles became widespread, how comfortable would you feel sharing the road with them?

Nov 1-7, 2021	
7	Extremely comfortable
14	Very comfortable
34	Somewhat comfortable
27	Not too comfortable
18	Not comfortable at all
*	No answer

ASK FORM 1 ONLY [XFORM=1] [N=5,153]:

DCARS13 The technology used to operate driverless passenger vehicles could be used for a number of purposes. Would you favor or oppose the use of this technology in each of the following purposes? [RANDOMIZE ITEMS]

	To the sould of the selection conditions	<u>Favor</u>	<u>Oppose</u>	Not sure	No answer
a. Taxis and ride-sharing vehicles Nov 1-7, 2021	41	34	25	*	
b.	18-wheeler trucks Nov 1-7, 2021	20	59	20	*
c.	Buses for public transportation Nov 1-7, 2021	34	43	22	1
d.	Delivery vehicles Nov 1-7, 2021	42	34	23	*

[PROGRAMMING NOTE: ASK BLOCKS 4-6 IF FORM 2; RANDOMIZE ORDER OF BLOCKS]

BLOCK 4

ASK FORM 2 ONLY [XFORM=2] [N=5,107]:

CHIPVIG

Computer chips are being developed which could be surgically implanted in a person's brain. In the future, this could make it possible for people with the computer chip implants to far more quickly and accurately process information.

ASK FORM 2 ONLY [XFORM=2] [N=5,107]:

BCHIP1

How much have you heard or read about computer chip implants in the brain that could make it possible for people to far more quickly and accurately process information?

Nov 1-7, 2021	
5	A lot
32	A little
62	Nothing at all
*	No answer

TREND FOR COMPARISON

New developments in understanding the brain are creating the possibility that doctors will be able to surgically implant a small computer chip in the brain. Right now, these implanted devices are being developed for people with some kind of illness or disability. But in the future, these implanted devices could potentially be available for use by HEALTHY individuals, giving people a much improved ability to concentrate and process information in everyday life.

CHIP1 How much have you heard or read about this idea before today?

<u>Mar 2-28, 2016</u>	
6	A lot
32	A little
61	Not at all
2	No answer

ASK FORM 2 ONLY [XFORM=2] [N=5,107]:

BCHIP2

Do you think widespread use of computer chip implants in the brain allowing people to far more quickly and accurately process information would be a...

Nov 1-7, 2021	
13	Good idea for society
56	Bad idea for society
31	Not sure
1	No answer

ASK FORM 2 ONLY [XFORM=2] [N=5,107]:

BCHIP3 Would you personally want a computer chip implant in the brain, allowing you to far more quickly and accurately process information, if you had the opportunity?

Nov 1-7, 2021	
6	Definitely want
14	Probably want
28	Probably NOT want
50	Definitely NOT want
1	No answer

TREND FOR COMPARISON

CHIP2

In general, do you think an implanted device giving HEALTHY people a much improved ability to concentrate and process information is something that you, personally, would want or not something you would want?

Yes, I would definitely want this
Yes, I would probably want this
No, I would probably NOT want this
No, I would definitely NOT want this
No answer

ASK FORM 2 ONLY [XFORM=2] [N=5,107]:

BCHIP4

If the use of computer chip implants in the brain becomes widespread, allowing people to far more quickly and accurately process information, do you think each of the following would happen? **[RANDOMIZE ITEMS]**

a.	People who have these computer	Definitely would <u>happen</u>	Probably would <u>happen</u>	Probably would NOT <u>happen</u>	Definitely would NOT <u>happen</u>	No <u>answer</u>
a.	chip implants in the brain would be more productive at their jobs Nov 1-7, 2021	10	52	26	10	3
b.	These computer chip implants in the brain would be used before we fully understand how they affect people's health Nov 1-7, 2021	36	42	13	7	2
c.	The use of these computer chip implants in the brain would lead to new innovation and problem solving in society Nov 1-7, 2021	11	48	27	11	3
d.	These techniques would go too far eliminating natural differences between people in society Nov 1-7, 2021	32	39	19	8	2

TREND FOR COMPARISON

CHIP6

If an implanted device becomes available, giving HEALTHY people a much improved ability to concentrate and process information, do you think the following are likely or not likely to happen as a result? [RANDOMIZE ITEMS]

		<u>Yes, likely</u>	No, not likely	No answer
a.	People who have these implanted devices will be more productive at their jobs Mar 2-28, 2016	55	41	5
c.	This option will be used before we fully understand how it affects people's health Mar 2-28, 2016	74	23	3
f.	Widespread use of this option will lead to new innovation and problem-solving in society Mar 2-28, 2016	51	44	4

ASK FORM 2 ONLY [XFORM=2] [N=5,107]:

BCHIP5

If the use of computer chip implants in the brain becomes widespread, allowing people to far more quickly and accurately process information, which statement better describes how you would feel about this development? **[RANDOMIZE RESPONSE OPTIONS]**

Nov 1-7, 2021	
35	As humans, we are always trying to better ourselves and this idea is no different
63	This idea is meddling with nature and crosses a line we should not cross
2	No answer

TREND FOR COMPARISON

Thinking about the possibility of an implanted device giving HEALTHY people a much improved ability to concentrate and process information...

CHIP5 Which of these statements comes closer to your view, even if neither is exactly right?

Mar 2-28, 2016	
46	As humans, we are always trying to better ourselves and this idea is no different
51	This idea is meddling with nature and crosses a line we should not cross
3	No answer

ASK FORM 2 ONLY [XFORM=2] [N=5,107]:

BCHIP6 If the use of computer chip implants in the brain becomes widespread, allowing people to far more quickly and accurately process information, do you think most people would...

Nov 1-7, 2021	
60	Feel pressure to get this
38	Not feel pressure to get this
2	No answer

[RANDOMIZE ORDER OF BCHIP7 AND BCHIP8]

ASK FORM 2 ONLY [XFORM=2] [N=5,107]:

BCHIP7

If the use of computer chip implants in the brain becomes widespread, allowing people to far more quickly and accurately process information, do you think people's judgments and decision-making would be... [RANDOMIZE RESPONSE OPTIONS 1 AND 2, WITH OPTION 3 ALWAYS LAST]

Nov 1-7, 2021	
24	Better than now
31	Worse than now
42	About the same as now
3	No answer

[RANDOMIZE ORDER OF BCHIP7 AND BCHIP8]

ASK FORM 2 ONLY [XFORM=2] [N=5,107]:

BCHIP8

If the use of computer chip implants in the brain becomes widespread, allowing people to far more quickly and accurately process information, do you think it would...

[RANDOMIZE RESPONSE OPTIONS 1 AND 2, WITH OPTION 3 ALWAYS LAST]

Nov 1-7, 2021	
57	Increase the gap between higher and lower-income Americans
10	Decrease the gap between higher and lower-income Americans
30	Not make much difference
3	No answer

ASK FORM 2 ONLY [XFORM=2] [N=5,107]:

BCHIP9

If the use of computer chip implants in the brain becomes widespread, allowing people to far more quickly and accurately process information, how often do you think each of these potential problems would happen? [RANDOMIZE ITEMS]

		A lot of the time	Some of the time	Rarely or <u>never</u>	No answer
a.	The computer chip implant would malfunction Nov 1-7, 2021	37	54	7	2
b.	Hackers would gain access to people's computer chip information without consent Nov 1-7, 2021	52	39	7	1
c.	The computer chip implant would cause unwanted changes to the way the brain functions				
	Nov 1-7, 2021	51	41	6	2

BCHIP10 How much of a role do you think each of the following groups should have in setting standards for how computer chip implants in the brain are used? **[RANDOMIZE ITEMS]**

		A major role	A minor role	No role at all	No answer
a.	Federal government agencies Nov 1-7, 2021	44	27	27	2
b.	The companies that develop these computer chip implants Nov 1-7, 2021	46	35	17	2
c.	The people getting these computer chip implants Nov 1-7, 2021	65	21	12	2
d.	The medical doctors who implant the computer chips in the brain Nov 1-7, 2021	64	24	10	2

ASK FORM 2 ONLY [XFORM=2] [N=5,107]:

BCHIP11

If the use of computer chip implants in the brain becomes widespread, allowing people to far more quickly and accurately process information, which is your greater concern?

[RANDOMIZE RESPONSE OPTIONS]

Nov 1-7, 2021	
47	Government will go too far regulating their use
50	Government will <u>not go far enough</u> regulating their use
3	No answer

ASK FORM 2 ONLY [XFORM=2] [N=5,107]:

BCHIP12

Which statement comes closer to your view when it comes to ensuring the safety and effectiveness of computer chip implants in the brain?

Implanted computer chips in the brain should be tested using... **[RANDOMIZE RESPONSE OPTIONS]**

Nov 1-7, 2021	
13	Existing standards used for medical devices
83	A higher standard than used for medical devices
3	No answer

ASK FORM 2 ONLY [XFORM=2] [N=5,107]:

BCHIP13

Would the use of computer chip implants in the brain be more acceptable, less acceptable or would it make no difference in each of the following circumstances? **[RANDOMIZE ITEMS]**

	The second second have a second off the office to	More <u>acceptable</u>	Less <u>acceptable</u>	No <u>difference</u>	No answer
a.	If people could turn on and off the effects Nov 1-7, 2021	59	9	31	2
b.	If it could be put in place without surgery Nov 1-7, 2021	53	9	36	2

TREND FOR COMPARISON

CHIP8

Would an implanted device giving HEALTHY people a much improved ability to concentrate and process information be more acceptable, less acceptable, or would it make no difference in each of these circumstances?

a. If people could turn on and off the effects

Mar 2-28, 2016	
32	More acceptable
16	Less acceptable
49	No difference
3	No answer

ASK FORM 2 ONLY [XFORM=2] [N=5,107]:

BCHIP14

Computer chip implants in the brain could be used for a number of purposes. Would you favor or oppose the use of computer chips implants in the brain for each of the following purposes? **[RANDOMIZE ITEMS]**

		<u>Favor</u>	<u>Oppose</u>	Not sure	No answer
a.	To treat age-related decline in mental abilities Nov 1-7, 2021	64	13	21	1
b.	To allow increased movement for people who are paralyzed Nov 1-7, 2021	77	8	14	1
C.	To make it possible for thoughts in the brain to search content on the internet without typing Nov 1-7, 2021	25	42	31	1
d.	To translate thoughts in the brain, without speaking, into text on a screen Nov 1-7, 2021	32	34	32	1

[PROGRAMMING NOTE: ASK BLOCKS 4-6 IF FORM 2; RANDOMIZE ORDER OF BLOCKS]

BLOCK 5

ASK FORM 2 ONLY [XFORM=2] [N=5,107]:

GENEVIG

New ways to modify a person's genes are being developed that could make it possible to change the DNA of embryos before a baby is born in order to greatly reduce a baby's risk of developing serious diseases or health conditions over their lifetime.

ASK FORM 2 ONLY [XFORM=2] [N=5,107]:

GENEV1

How much have you heard or read about using gene editing to greatly reduce a baby's risk of developing serious diseases or health conditions over their lifetime?

<u>Nov 1-7, 2021</u>	
8	A lot
47	A little
44	Nothing at all
1	No answer

TREND FOR COMPARISON

New developments in genetics and gene-editing techniques are making it possible to treat some diseases and conditions by modifying a person's genes. In the future, gene-editing techniques could be used for any newborn, by changing the DNA of the embryo before it is born, and giving that baby a much reduced risk of serious diseases and conditions over his or her lifetime. Any changes to a baby's genetic make-up could be passed on to future generations if they later have children, and over the long term this could change the genetic characteristics of the population.

GEN1 How much have you heard or read about this idea before today?

Mar 2-28, 2016	
9	A lot
48	A little
42	Not at all
1	No answer

ASK FORM 2 ONLY [XFORM=2] [N=5,107]:

GENEV2

Do you think the widespread use of gene editing to greatly reduce a baby's risk of developing serious diseases or health conditions over their lifetime would be a...

Nov 1-7, 2021	
30	Good idea for society
30	Bad idea for society
39	Not sure
*	No answer

ASK FORM 2 ONLY [XFORM=2] [N=5,107]:

GENEV3 If gene editing to greatly reduce a baby's risk of developing serious diseases or health conditions over their lifetime were available, is this something you would want?

Nov 1-7, 2021	
16	Yes, I would definitely want this for my baby
32	Yes, I would probably want this for my baby
25	No, I would probably NOT want this for my baby
24	No, I would definitely NOT want this for my baby
3	No answer

TREND FOR COMPARISON

GEN2

If you had a baby, do you think this gene-editing -- giving a much reduced risk of serious diseases and conditions over his or her lifetime -- is something that you, personally, would want for your baby or not something you would want for your baby?

Mar 2-28, 2016 16 Yes, I would definitely want this for my baby 32 Yes, I would probably want this for my baby No, I would probably NOT want this for my baby No, I would definitely NOT want this for my baby No answer

ASK FORM 2 ONLY [XFORM=2] [N=5,107]:

GENEV4

If the use of gene editing to greatly reduce a baby's risk of developing serious diseases or health conditions over their lifetime becomes widespread, do you think each of the following would happen? [RANDOMIZE ITEMS]

		Definitely would <u>happen</u>	Probably would <u>happen</u>	Probably would NOT <u>happen</u>	Definitely would NOT <u>happen</u>	No <u>answer</u>
a.	Even if gene editing is used appropriately in some cases, others would use these techniques in ways that are morally unacceptable Nov 1-7, 2021	45	39	9	5	2
b.	These gene editing techniques would help people live longer and better quality lives Nov 1-7, 2021	13	52	23	9	3
C.	Development of these gene editing techniques would pave the way for new medical advances that benefit society as a whole Nov 1-7, 2021	16	51	22	8	3
d.	These gene editing techniques would go too far eliminating natural differences between people in society Nov 1-7, 2021	24	44	22	7	3

TREND FOR COMPARISON

MED6 Thinking about society as a whole...

How likely, if at all, do you think each of the following would be to occur if gene editing to change a baby's genetic characteristics becomes widely available? **[RANDOMIZE ITEMS]**

		Very likely	Fairly <u>likely</u>	Not too <u>likely</u>	Not at all <u>likely</u>	No answer
a.	Even if gene editing is used appropriately in some cases, others will use these techniques in ways that are morally unacceptable Apr 23-May 6, 2018	54	32	9	3	1
b.	These techniques will help people live longer and better quality lives Apr 23-May 6, 2018	16	48	27	8	2
e.	Development of these techniques will pave the way for new medical advances that benefit society as a whole Apr 23-May 6, 2018	18	42	30	8	1

ASK FORM 2 ONLY [XFORM=2] [N=5,107]:

GENEV5

If the use of gene editing to greatly reduce a baby's risk of developing serious diseases or health conditions over their lifetime becomes widespread, which statement better describes how you would feel about this development? [RANDOMIZE RESPONSE OPTIONS]

Nov	1_7	2021

- As humans, we are always trying to better ourselves and this idea is no different.
- This idea is meddling with nature and crosses a line we should not cross.
- No answer

TREND FOR COMPARISON

Thinking about the possibility of this gene-editing giving HEALTHY babies a much reduced risk of serious diseases and conditions ...

GEN5 Which of these statements comes closer to your view, even if neither is exactly right? [RANDOMIZE RESPONSE OPTIONS]

Mar 2-28, 2016

- As humans, we are always trying to better ourselves and this idea is no different.
- This idea is meddling with nature and crosses a line we should not cross.
- 3 No answer

GENEV6

If the use of gene editing to greatly reduce a baby's risk of developing serious diseases or health conditions over their lifetime becomes widespread, do you think most parents would...

Nov 1-7, 2021

73 Feel pressure to get this for their baby 25 Not feel pressure to get this for their baby 2 No answer

RANDOMIZE ORDER OF GENEV7 AND GENEV8 ASK FORM 2 ONLY [XFORM=2] [N=5,107]:

GENEV7

If the use of gene editing to greatly reduce a baby's risk of developing serious diseases or health conditions over their lifetime becomes widespread, do you think people's quality of life would be... [RANDOMIZE RESPONSE OPTIONS 1 AND 2, WITH OPTION 3 ALWAYS LAST]

Nov 1-7, 2021	
39	Better than now
18	Worse than now
40	About the same as now
3	No answer

RANDOMIZE ORDER OF GENEV7 AND GENEV8 ASK FORM 2 ONLY [XFORM=2] [N=5,107]:

GENEV8

If the use of gene editing to greatly reduce a baby's risk of developing serious diseases or health conditions over their lifetime becomes widespread, do you think it would...

[RANDOMIZE RESPONSE OPTIONS 1 AND 2, WITH OPTION 3 ALWAYS LAST]

[RANDOMIZE RESPONSE OPITONS I AND 2, WITH OPITON 3 ALWAYS LAST

Nov 1-7, 2021	
55	Increase the gap between higher and lower-income Americans
8	Decrease the gap between higher and lower-income Americans
35	Not make much difference
2	No answer

ASK FORM 2 ONLY [XFORM=2] [N=5,107]:

GENEV9

How much of a role do you think each of the following groups should have in setting standards for how gene editing techniques are used? **[RANDOMIZE ITEMS]**

		A major role	A minor role	No role at all	No answer
a.	Federal government agencies Nov 1-7, 2021	41	31	26	2
b.	The companies that develop these gene editing techniques Nov 1-7, 2021	44	35	19	2
c.	People who get these gene editing techniques				
	Nov 1-7, 2021	55	29	15	2
d.	The medical scientists who provide these gene editing techniques Nov 1-7, 2021	67	21	10	2

GENEV10

If the use of gene editing to greatly reduce a baby's risk of serious diseases or health conditions over their lifetime becomes widespread, which is your greater concern?

[RANDOMIZE RESPONSE OPTIONS]

Nov 1-7, 2021

- Government will go too far regulating their use
 Government will not go far enough regulating their use
- 2 No answer

ASK FORM 2 ONLY [XFORM=2] [N=5,107]:

GENEV11

Which statement comes closer to your views when it comes to ensuring the safety and effectiveness of these gene editing techniques?

Gene editing to greatly reduce a baby's risk of serious diseases or health conditions over their lifetime should be tested using... **[RANDOMIZE RESPONSE OPTIONS]**

Nov 1-7, 2021

17	Existing standards used for medical treatments
80	A higher standard than used for medical treatments
2	No answer

ASK FORM 2 ONLY [XFORM=2] [N=5,107]:

GENEV12

Would the use of gene editing to greatly reduce a baby's risk of serious diseases or health conditions over their lifetime be more acceptable, less acceptable or would it make no difference in each of the following circumstances? [RANDOMIZE ITEMS]

		More <u>acceptable</u>	Less <u>acceptable</u>	No <u>difference</u>	No answer
a.	If people could choose which diseases and conditions are affected Nov 1-7, 2021	49	15	34	2
b.	If the effects were limited to that person and NOT passed on to future generations Nov 1-7, 2021	48	16	34	2
C.	If gene editing were only used in adults who could consent to the procedure, rather than for babies Nov 1-7, 2021	53	11	34	2

TREND FOR COMPARISON

GEN8

Would this gene-editing giving HEALTHY babies a much reduced risk of serious diseases and conditions be more acceptable, less acceptable, or would it make no difference in each of these circumstances?

a. If people could choose which diseases and conditions are affected

Mar 2-28, <u>2016</u>	
41	More acceptable
17	Less acceptable
39	No difference
3	No answer

c. If the effects were limited to that person and NOT passed on to future generations

<u>Mar 2-28, 2016</u>	
34	More acceptable
23	Less acceptable
40	No difference
3	No answer

ASK FORM 2 ONLY [XFORM=2] [N=5,107]:

GENEV13 Gene editing could be used for a number of purposes. Would you favor or oppose the use of gene editing for each of the following purposes? [RANDOMIZE ITEMS]

a.	To change a baby's physical characteristics	<u>Favor</u>	<u>Oppose</u>	Not sure	<u>No answer</u>
	to make them more attractive Nov 1-7, 2021	5	74	20	1
b.	To treat serious diseases or health conditions that a person currently has Nov 1-7, 2021	71	10	18	1

[PROGRAMMING NOTE: ASK BLOCKS 4-6 IF FORM 2; RANDOMIZE ORDER OF BLOCKS]

BLOCK 6

ASK FORM 2 ONLY [XFORM=2] [N=5,107]:

EXOVIG

Robotic exoskeletons are being developed that could make it possible to greatly increase a person's strength and allow them to lift heavy objects when wearing the device. These devices could include an artificial intelligence computer system to help guide the device. They are expected to be used by workers doing manual labor jobs, such as manufacturing or construction.

ASK FORM 2 ONLY [XFORM=2] [N=5,107]:

EXOV1

How much have you heard or read about robotic exoskeletons with built-in artificial intelligence computer systems for manual labor?

Nov 1-7, 2021	
6	A lot
37	A little
57	Nothing at all
*	No answer

EXOV2 Do you think widespread use of robotic exoskeletons would be a...

Nov 1-7, 2021	
33	Good idea for society
24	Bad idea for society
42	Not sure
*	No answer

ASK FORM 2 ONLY [XFORM=2] [N=5,107]:

EXOV3 Would you personally want to use a robotic exoskeleton with a built-in artificial intelligence computer system for manual labor, if you had the opportunity?

Nov 1-7, 2021	
15	Definitely want
30	Probably want
33	Probably NOT want
21	Definitely NOT want
1	No answer

ASK FORM 2 ONLY [XFORM=2] [N=5,107]:

EXOV4 If the use of robotic exoskeletons for manual labor becomes widespread, do you think each of the following would happen? [RANDOMIZE ITEMS]

		Definitely would <u>happen</u>	Probably would <u>happen</u>	Probably would NOT <u>happen</u>	Definitely would NOT <u>happen</u>	No answer
a.	Employers would need fewer workers and lay off part of their work force Nov 1-7, 2021	38	44	14	3	2
	1101 1 7, 2021	30		- '	J	_
b.	Workers would experience fewer workplace injuries Nov 1-7, 2021	17	53	23	5	2
c.	Workers would lose strength by relying too much on exoskeletons Nov 1-7, 2021	22	51	21	4	2
d.	More people would be able to do manual labor jobs Nov 1-7, 2021	20	45	24	8	2

ASK FORM 2 ONLY [XFORM=2] [N=5,107]:

EXOV5 If the use of robotic exoskeletons for manual labor becomes widespread, which statement better describes how you would feel about this development [RANDOMIZE RESPONSE OPTIONS]

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ren

EXOV6

If the use of robotic exoskeletons for manual labor becomes widespread, do you think conditions for workers would be... [RANDOMIZE RESPONSE OPTIONS 1 AND 2, WITH OPTION 3 ALWAYS LAST]

Nov 1-7, 2021	
32	Better than now
31	Worse than now
36	About the same as now
2	No answer

ASK FORM 2 ONLY [XFORM=2] [N=5,107]:

EXOV7

Thinking about the manufacturing of robotic exoskeletons, which of the following statements comes closest to your view, even if neither is exactly right? [RANDOMIZE RESPONSE OPTIONS 1 AND 2, WITH OPTION 3 ALWAYS LAST]

Nov 1-7, 2021	
40	Robotic exoskeletons should only be made if they fit a wide range of worker body types, even if that increase their cost It's okay to make robotic exoskeletons that just fit the typical body types of manual labor workers in order to lower their cost, even if they won't work for
17	many other people
41	Not sure
1	No answer

ASK FORM 2 ONLY [XFORM=2] [N=5,107]:

EXOV8

How much of a role do you think each of the following groups should have in setting standards for how robotic exoskeletons for manual labor are used? **[RANDOMIZE ITEMS]**

	Education and a section	A major role	A minor role	No role at all	No answer
a.	Federal government agencies Nov 1-7, 2021	35	39	25	2
b.	The companies that develop robotic exoskeletons				
	Nov 1-7, 2021	55	31	12	2
c.	The workers themselves Nov 1-7, 2021	67	22	9	2
d.	Employers Nov 1-7, 2021	49	38	11	2

ASK FORM 2 ONLY [XFORM=2] [N=5,107]:

EXOV9

If the use of robotic exoskeletons for manual labor becomes widespread, which is your greater concern? **[RANDOMIZE RESPONSE OPTIONS]**

Nov 1-7, 2021	
49	Government will go too far regulating their use
48	Government will not go far enough regulating their use
3	No answer

EXOV10

Which statement comes closer to your view when it comes to ensuring the safety and effectiveness of robotic exoskeletons for manual labor?

Robotic exoskeletons should be tested using... [RANDOMIZE RESPONSE OPTIONS]

Nov 1-7, 2021	
26	Existing standards used for workplace equipment
72	A higher standard than used for workplace equipment
2	No answer

ASK FORM 2 ONLY [XFORM=2] [N=5,107]:

EXOV11

Would the use of a robotic exoskeleton with a built-in artificial computer system for manual labor be more acceptable, less acceptable or would it make no difference in each of the following circumstances?

		More <u>acceptable</u>	Less <u>acceptable</u>	No <u>difference</u>	No answer
a.	If employers could only use robotic exoskeletons to improve worker safety, rather than to increase their productivity				
	Nov 1-7, 2021	59	14	25	2
b.	If people were required to be licensed to operate robotic exoskeletons	60	10	21	1
	Nov 1-7, 2021	68	10	21	Ţ

ASK FORM 2 ONLY [XFORM=2] [N=5,107]:

EXOV12

Robotic exoskeletons with built-in artificial intelligence computer systems could be used for a number of purposes. Would you favor or oppose the use of robotic exoskeletons for each of the following purposes? **[RANDOMIZE ITEMS]**

		<u>Favor</u>	<u>Oppose</u>	Not sure	No answer
a.	To improve the quality of life for people with physical limitations Nov 1-7, 2021	79	6	14	1
b.	To give people greater strength for recreational activities Nov 1-7, 2021	20	49	30	1
c.	To increase the ability of firefighters to lift in emergency situations Nov 1-7, 2021	77	7	14	1