United States Court of Appeals

FOR THE DISTRICT OF COLUMBIA CIRCUIT

Argued May 2, 2014 Decided January 30, 2015

No. 13-1060

POM WONDERFUL, LLC, ET AL.,
PETITIONERS

v.

FEDERAL TRADE COMMISSION,
RESPONDENT

On Petition for Review of an Order
of the Federal Trade Commission

Thomas C. Goldstein argued the cause for petitioners POM Wonderful, LLC, et al. With him on the briefs were *John Graubert*, *Megan L. Rodgers*, and *Erik S. Jaffe*.

Erik S. Jaffe was on the brief for petitioner Matthew Tupper.

Bilal K. Sayyed was on the brief for *amici curiae* Consumer Healthcare Products Association and Council for Responsible Nutrition in support of petitioners.

Jonathan W. Emord was on the brief for *amici curiae* Alliance for Natural Health USA and TechFreedom in support of petitioners.

Jonathan E. Nuechterlein, General Counsel, Federal Trade Commission, argued the cause for respondent. With him on the brief were *Joel Marcus*, Assistant General Counsel, and *Imad D. Abyad*, Attorney. *John F. Daly*, Attorney, Federal Trade Commission, entered an appearance.

Julie A. Murray, *Scott L. Nelson*, *Allison M. Zieve*, and *Stephen Gardner* were on the brief for *amici curiae* Public Citizen, Inc. and Center for Science in the Public Interest in support of respondent.

Before: GARLAND, *Chief Judge*, SRINIVASAN, *Circuit Judge*, and GINSBURG, *Senior Circuit Judge*.

Opinion for the Court filed by *Circuit Judge* SRINIVASAN.

SRINIVASAN, *Circuit Judge*: POM Wonderful, LLC produces, markets, and sells a number of pomegranate-based products. In a series of advertisements from 2003 to 2010, POM touted medical studies ostensibly showing that daily consumption of its products could treat, prevent, or reduce the risk of various ailments, including heart disease, prostate cancer, and erectile dysfunction. Many of those ads mischaracterized the scientific evidence concerning the health benefits of POM's products with regard to those diseases.

In 2010, the Federal Trade Commission filed an administrative complaint charging that POM and related parties had made false, misleading, and unsubstantiated representations in violation of the Federal Trade Commission Act. After extensive administrative proceedings, the full Commission voted to hold POM and the associated parties liable for violating the FTC Act and ordered them to cease and desist from making misleading and inadequately supported claims about the health benefits of POM products.

The Commission's order also bars POM and the related parties from running future ads asserting that their products treat or prevent any disease unless armed with at least two randomized, controlled, human clinical trials demonstrating statistically significant results.

POM and the associated parties petition for review of the Commission's order, arguing that the order runs afoul of the FTC Act, the Administrative Procedure Act, and the First Amendment. We deny the bulk of petitioners' challenges. The FTC Act proscribes—and the First Amendment does not protect—deceptive and misleading advertisements. Here, we see no basis for setting aside the Commission's conclusion that many of POM's ads made misleading or false claims about POM products. Contrary to petitioners' contentions, moreover, the Commission had no obligation to adhere to notice-and-comment rulemaking procedures before imposing liability in its adjudicatory proceeding. Additionally, we affirm the Commission's remedial order insofar as it requires POM to gain the support of at least one randomized, controlled, human clinical trial study before claiming a causal relationship between consumption of POM products and the treatment or prevention of any disease. We find inadequate justification, however, for the Commission's blanket requirement of at least *two* such studies as a precondition to any disease-related claim. In all other respects, we deny the petition for review.

I.

A.

Since 1987, entrepreneurs Stewart and Lynda Resnick have acquired and planted thousands of acres of pomegranate orchards in California. In 1998, they began to collaborate

with doctors and scientists to investigate the potential health benefits of pomegranate consumption. They formed POM Wonderful, LLC to make, market, and sell pomegranate-based products. The products include POM Wonderful 100% Pomegranate Juice and two dietary supplements, POM_x Pills and POM_x Liquid, which contain pomegranate extract in concentrated form. The Resnicks are the sole owners of POM Wonderful and an affiliated company, Roll Global LLC, which provides advertising and other services to POM. Those entities have engaged in a broad array of advertising campaigns promoting POM products through various media including magazine ads, newspaper inserts, billboards, posters, brochures, press releases, and website materials.

POM's promotional materials regularly referenced scientific support for the claimed health benefits of its pomegranate products. By 2010, the Resnicks, POM, and Roll had spent more than $35 million on pomegranate-related medical research, sponsoring more than one hundred studies at forty-four different institutions. This case involves studies examining the efficacy of POM's products with regard to three particular ailments: heart disease, prostate cancer, and erectile dysfunction.

1. POM sponsored a number of studies examining the capacity of its products to improve cardiovascular health. One such study, led by Dr. Michael Aviram of the Technion-Israel Institute of Technology, examined the effect of pomegranate juice consumption by patients with carotid artery stenosis. Carotid artery stenosis is the narrowing of the arteries that supply oxygenated blood to the brain, usually caused by a buildup of plaque inside the arteries.

In Dr. Aviram's study, ten patients with carotid artery stenosis consumed concentrated pomegranate juice daily for a

year, while nine patients with carotid artery stenosis served as a control group and consumed no pomegranate juice. The investigators measured the change in the patients' carotid intima-media thickness (CIMT), an indicator of plaque buildup. They found that patients who consumed pomegranate juice every day experienced a reduction in CIMT of "up to 30%" after one year, while CIMT for patients in the control group increased by 9% after one year. *POM Wonderful LLC*, No. 9344, Initial Decision of ALJ at 115 ¶ 791 (U.S. Fed. Trade Comm'n May 17, 2012) (ALJ Initial Decision). As one of POM's experts would later testify, the Aviram study, while "suggest[ing] a benefit" from pomegranate juice consumption for patients with carotid artery stenosis, was "not at all conclusive," in part because of the study's small sample size. *Id*. at 118 ¶ 802 (quoting expert testimony). In 2004, the journal *Clinical Nutrition* published the study. *See* M. Aviram et al., *Pomegranate Juice Consumption for 3 Years by Patients with Carotid Artery Stenosis Reduces Common Carotid Intima-Media Thickness, Blood Pressure and LDL Oxidation*, 23 Clinical Nutrition 423 (2004).

Subsequently, in 2005, a larger study, led by Dr. Dean Ornish of the University of California, San Francisco and the Preventative Medicine Research Institute, followed seventy-three patients with at least one cardiovascular risk factor for one year. The patients were randomly assigned either to drink one cup of pomegranate juice daily or to drink a placebo beverage. At the end of the study, Dr. Ornish and his co-investigators found no statistically significant difference between the treatment group and the placebo group in CIMT change or any other heart-related measure.

In 2006, a third, still larger study, led by Dr. Michael Davidson of the University of Chicago, followed 289 patients

with one or more coronary heart disease risk factors. As in the Ornish study, the patients were randomly assigned to drink either pomegranate juice or a placebo beverage each day. At the end of eighteen months, Dr. Davidson and his co-investigators found no statistically significant difference in the rate of carotid intima-media thickening between patients in the treatment group and those in the placebo group. POM initially delayed publication of the adverse findings, but ultimately allowed publication of the study in 2009. *See* Michael H. Davidson et al., *Effects of Consumption of Pomegranate Juice on Carotid Intima-Media Thickness in Men and Women at Moderate Risk for Coronary Heart Disease*, 104 Am. J. Cardiology 936 (2009).

In their final report, Dr. Davidson and his co-investigators noted that they had found some evidence of an association between pomegranate juice consumption and decreased CIMT among subgroups of patients with high triglyceride levels and low levels of HDL ("good") cholesterol. Dr. Davidson and his co-authors emphasized, however, that the findings for those subgroups were based on "post hoc exploratory analyses" unanticipated in the study protocol. As Dr. Davidson and his co-authors noted, "post hoc exploratory analyses . . . should be interpreted with caution" because of an increased risk of "type I errors" (i.e., false positives). *See id.* at 941. Even for patients in the high-risk subgroups, moreover, the reduction in arterial thickness was between 4% and 9% (depending on the measurement), substantially below the 30% decrease reported by Dr. Aviram.

Although Drs. Ornish and Davidson completed their arterial thickness studies in 2005 and 2006, respectively, a consumer reading POM's promotional materials after 2006 would not have known of those studies or that they cast doubt on Dr. Aviram's prior findings. In June 2007, for example,

POM distributed a brochure featuring a statement by Dr. Aviram that "POM Wonderful Pomegranate Juice has been proven to promote cardiovascular health," along with a description of his arterial thickness study, but with no mention of Drs. Ornish's and Davidson's contrary findings. *POM Wonderful LLC*, No. 9344, Opinion of the Commission, App. B fig.10, at 5 (U.S. Fed. Trade Comm'n Jan. 10, 2013) (FTC Op.). That same summer, POM published a newsletter in which it asserted that "NEW RESEARCH OFFERS FURTHER PROOF OF THE HEART-HEALTHY BENEFITS OF POM WONDERFUL JUICE." *Id.* App. B fig.16, at 3. The newsletter claimed a "30% DECREASE IN ARTERIAL PLAQUE" on the basis of Dr. Aviram's limited study but again omitted any mention of the Ornish and Davidson findings. *Id.* And in 2008 and 2009, POM conducted a $1 million promotional campaign, with seventy ads in newspapers and magazines across the country, in which it trumpeted Dr. Aviram's findings—including the 30% figure—without any acknowledgement of the contrary Ornish and Davidson studies. *Id.* App. B fig.25; *see also id.* App. B fig.19.

Dr. Ornish also conducted a separate study examining the relationship between pomegranate juice and blood flow. The study followed forty-five patients with coronary heart disease and myocardial ischemia (insufficient blood flow to the heart due to narrowing of the arteries). The patients were randomly assigned to drink either pomegranate juice or a placebo beverage daily. Dr. Ornish later testified that, although his protocol called for a twelve-month study, he terminated the study abruptly after three months because the Resnicks did not follow through on their previous commitment to fund a twelve-month trial.

At the end of three months, patients in the treatment group outperformed patients in the placebo group on one measure of blood flow to the heart, known as the "summed difference score." The study, however, found no statistically significant difference between the treatment and control groups on two other measures of blood flow (the "summed rest score" and the "summed stress score"), nor did it find any statistically significant differences in blood pressure, cholesterol, or triglycerides. Medical experts later noted a number of shortcomings of the study, including that patients in the placebo group began the study with significantly worse blood flow than patients in the treatment group, potentially skewing the outcomes.

POM touted the results of the second Ornish study in its ads and promotional materials without noting the study's limitations or acknowledging that patients in the treatment group showed no statistically significant improvement in blood flow on two of three measures. In September 2005, for instance, POM issued a press release announcing the study in which it asserted that "blood flow to the heart improved approximately 17% in the pomegranate juice group" and that differences in blood flow between the two groups were "statistically significant." *Id.* App. B fig.8. POM continued to make similar statements in its promotional materials through 2009. *See id.* App. B fig.10, at 5 (June 2007 brochure claiming that "[p]atients who consumed 8oz of POM Wonderful 100% Pomegranate Juice daily for three months experienced a 17% improvement in blood flow"); *id.* App. B fig.16, at 3 (summer 2007 newsletter claiming "17% IMPROVED BLOOD FLOW"); *id.* App. B figs.37, 38, 39 (similar claims on POM websites in 2009).

2. In addition to the cardiovascular studies, petitioners sponsored research on the effect of pomegranate juice

consumption in prostate cancer patients. One study, led by Dr. Allan Pantuck of the University of California, Los Angeles Medical School, followed forty-six patients who had been diagnosed with prostate cancer. All of the patients had already been treated by radical prostatectomy, radiation therapy, or cryotherapy. The study called for them to drink eight ounces of pomegranate juice daily. There was no control group. The study concluded that the patients' "PSA doubling time," a measure of the rapidity of growth in prostate tumor cells, increased from fifteen months at the beginning of the study to fifty-four months at the end. But as Dr. Pantuck himself noted, patients who have undergone radical prostatectomy or radiation therapy for prostate cancer commonly experience a lengthening in PSA doubling time regardless of whether they consume pomegranate juice.

POM, however, made no mention of the limitations of the Pantuck study in its public statements. In a July 2006 press release, POM claimed that "drinking 8 ounces of POM Wonderful pomegranate juice daily prolonged post-prostate surgery PSA doubling time from 15 to 54 months," without noting that some or all of the increase in the patients' PSA doubling times may have resulted from the radical prostatectomies or radiation treatments undergone by the patients. *Id.* App. B fig.9, at 2. POM advanced similar claims in a June 2007 brochure and in a fall 2007 newsletter, again with no disclosure of the study's limitations. *See id.* App. B figs.10, 17. In 2008 and 2009, POM ads in the New York Times Magazine and TIME Magazine asserted that prostate cancer patients who drank eight ounces of POM Wonderful 100% Pomegranate Juice a day for at least two years experienced "significantly slower" PSA doubling times, once again without any acknowledgment that the patients' PSA doubling times may have slowed regardless of whether they consumed pomegranate juice. *Id.* App. B figs.21, 27; *see also*

id. figs.36, 37, 38, 39 (similar claims on POM websites in 2009).

3. Petitioners additionally sponsored research of the effects of pomegranate juice consumption in men with mild to moderate erectile dysfunction. One study, led by Dr. Harin Padma-Nathan, a urologist in Beverly Hills, California, followed fifty-three patients over eight weeks. The study used a "crossover" design: one group of patients consumed pomegranate juice for the first four weeks and then consumed a placebo beverage for the next four, while a second group consumed the placebo beverage for the first four weeks and pomegranate juice for the next four. Dr. Padma-Nathan and co-investigators evaluated the results using two measures: the International Index of Erectile Function (IIEF), a fifteen-question instrument, and the Global Assessment Questionnaire (GAQ), a one-question test. The IIEF is a "validated" tool, which means that the measure has been shown to have statistical reliability, while the one-question GAQ is not a validated measure for assessing erectile function. *See generally* R. C. Rosen et al., *The International Index of Erectile Function (IIEF): A State-of-the-Science Review*, 14 Int'l J. Impotence Res. 226, 226 (2002).

Dr. Padma-Nathan's study showed some evidence that patients scored higher on the GAQ measure after drinking pomegranate juice. But the *p*-value—the probability of observing at least as strong an association between pomegranate juice consumption and GAQ scores due to random chance—was 0.058, falling just short of statistical significance at the conventional $p<0.05$ level. On the scientifically validated IIEF measure, however, the difference between patients' scores after drinking pomegranate juice and after drinking the placebo beverage came nowhere near statistical significance: there was nearly a 3/4 likelihood of

observing as strong an association due to random chance (p=0.72). *See* C.P. Forest, H. Padma-Nathan & H.R. Liker, *Efficacy and Safety of Pomegranate Juice on Improvement of Erectile Dysfunction in Male Patients with Mild to Moderate Erectile Dysfunction: A Randomized, Placebo-Controlled, Double-Blind, Crossover Study*, 19 Int'l J. Impotence Res. 564, 566 (2007).

In its public statements about Dr. Padma-Nathan's study, POM made no mention of the negative results with respect to the validated IIEF measure. POM instead touted the study outcomes based exclusively on the non-validated GAQ measure. A 2007 POM press release thus described Dr. Padma-Nathan's study as follows:

> At the end of . . . each four week period, efficacy was assessed using the International Index of Erectile Function (IIEF) and Global Assessment Questionnaire (GAQ). The IIEF is a validated questionnaire that has been demonstrated to correlate with ED intensity. The GAQ elicits the patient's self-evaluation of the study beverages' effect on erectile activity. Forty seven percent of the subjects reported that their erections improved with POM Wonderful Pomegranate Juice, while only 32% reported improved erections with the placebo (p=0.058).

FTC Op. App. B fig.15, at 2. That press release, while referencing IIEF and thus suggesting that its description of the findings would account for that measure, in fact promoted the results based solely on the GAQ measure with no acknowledgment of the adverse findings on IIEF scores. In 2009 and 2010, POM similarly touted the GAQ findings—

again without any mention of the negative IIEF results—on websites and in print ads. *See id.* App. B figs.33, 36, 37, 38, 39.

B.

In September 2010, the Federal Trade Commission filed an administrative complaint alleging that POM, Roll, the Resnicks, and POM's then-President Matthew Tupper had made false, misleading, and unsubstantiated representations in violation of the FTC Act. *See* FTC Act § 5(a)(1), 15 U.S.C. § 45(a)(1); FTC Act § 12(a), 15 U.S.C. § 52(a). The complaint identified forty-three advertisements or promotional materials containing claims alleged to be false, misleading, or unsubstantiated.

In May 2012, following an administrative trial, the Commission's chief administrative law judge found that nineteen of POM's advertisements and promotional materials contained implied claims that POM products treat, prevent, or reduce the risk of heart disease, prostate cancer, or erectile dysfunction. He further concluded that POM and the related parties lacked sufficient evidence to substantiate those claims, and that the claims were material to consumers. He therefore held the POM parties liable under the FTC Act and ordered them to cease and desist from making further claims about the health benefits of any food, drug, or dietary supplement unless the claims are non-misleading and supported by competent and reliable scientific evidence.

Both sides appealed to the full Commission. POM and the related parties argued that they should not have been held liable at all, while the Commission's complaint counsel argued that additional ads and promotional items (beyond the nineteen identified by the administrative law judge) made

false or misleading claims. The complaint counsel also urged the Commission to impose an injunctive order barring POM from claiming that any of its products is effective in the treatment or prevention of any disease unless POM first gains pre-approval from the Food and Drug Administration.

In January 2013, the Commission unanimously affirmed the administrative law judge's decision to impose liability on POM and the other parties. Four of the five commissioners found that thirty-six of POM's ads and promotional items made false or misleading claims, but the Commission specified that injunctive relief would be justified even if based solely on the nineteen ads found by the administrative law judge (and affirmed by the Commission) to be false or misleading. Commissioner Ohlhausen filed a concurring statement saying that she, like the administrative law judge, would have found a smaller number of POM ads to be false or misleading. But she agreed that POM and the related parties should all be held liable for violating the FTC Act.

The Commission also broadened the scope of the injunctive order against POM and the other parties, although it declined complaint counsel's request to require FDA pre-approval. Part I of the Commission's final order prohibits POM, Roll, the Resnicks, and Tupper from representing that any food, drug, or dietary supplement "is effective in the diagnosis, cure, mitigation, treatment, or prevention of any disease"—including but not limited to heart disease, prostate cancer, and erectile dysfunction—unless the representation is non-misleading and supported by "competent and reliable scientific evidence that, when considered in light of the entire body of relevant and reliable scientific evidence, is sufficient to substantiate that the representation is true." The order goes on to say:

> For purposes of this Part I, competent and reliable scientific evidence shall consist of at least two randomized and controlled human clinical trials (RCTs) . . . that are randomized, well controlled, based on valid end points, and conducted by persons qualified by training and experience to conduct such studies. Such studies shall also yield statistically significant results, and shall be double-blinded unless [POM, Roll, the Resnicks, or Tupper] can demonstrate that blinding cannot be effectively implemented given the nature of the intervention.

POM Wonderful LLC, No. 9344, Final Order at 2 (U.S. Fed. Trade Comm'n Jan. 10, 2013) (FTC Final Order).

Part II of the order prohibits POM and the related parties from misrepresenting the results of scientific studies in their ads. Part III bars them from making any claim about the "health benefits" of a food, drug, or dietary supplement unless the representation is non-misleading and supported by "competent and reliable scientific evidence." But unlike Part I, which applies specifically and solely to *disease*-related claims, Part III contains no requirement that randomized, controlled, human clinical trials support more general claims about health benefits.

POM, Roll, the Resnicks, and Tupper petitioned this court for review. We have jurisdiction under sections 5(c) and 5(d) of the FTC Act, 15 U.S.C. § 45(c)-(d).

II.

Per our usual practice, we first address petitioners' statutory challenges to the Commission's order before turning to their constitutional claims. *See In re Fashina*, 486 F.3d 1300, 1302-03 (D.C. Cir. 2007). On review of an order under the FTC Act, "[t]he findings of the Commission as to the facts, if supported by evidence, shall be conclusive." FTC Act § 5(c), 15 U.S.C. § 45(c). That standard is "essentially identical" to the familiar "substantial evidence" test under the Administrative Procedure Act. *FTC v. Ind. Fed'n of Dentists*, 476 U.S. 447, 454 (1986). The Commission "is often in a better position than are courts to determine when a practice is 'deceptive' within the meaning of the [FTC] Act," and that "admonition is especially true with respect to allegedly deceptive advertising since the finding of a § 5 violation in this field rests so heavily on inference and pragmatic judgment." *FTC v. Colgate-Palmolive Co.*, 380 U.S. 374, 385 (1965).

A.

In determining whether an advertisement is deceptive in violation of section 5 of the FTC Act, the Commission engages in a three-step inquiry, considering: (i) what claims are conveyed in the ad, (ii) whether those claims are false, misleading, or unsubstantiated, and (iii) whether the claims are material to prospective consumers. *See Kraft, Inc. v. FTC*, 970 F.2d 311, 314 (7th Cir. 1992); *see also Thompson Med. Co.*, 104 F.T.C. 648, 660-61 (1984), *aff'd*, 791 F.2d 189, 197 (D.C. Cir. 1986). At the first step, the Commission "will deem an advertisement to convey a claim if consumers acting reasonably under the circumstances would interpret the advertisement to contain that message." *Thompson Med. Co.*, 104 F.T.C. at 788. The Commission "examines the overall

net impression" left by an ad, *Kraft*, 970 F.2d at 314, and considers whether "at least a significant minority of reasonable consumers" would "likely" interpret the ad to assert the claim, *Telebrands Corp.*, 140 F.T.C. 278, 291 (2005), *aff'd*, 457 F.3d 354 (4th Cir. 2006).

In identifying the claims made by an ad, the Commission distinguishes between "efficacy claims" and "establishment claims." *See Thompson Med. Co. v. FTC*, 791 F.2d 189, 194 (D.C. Cir. 1986). An efficacy claim suggests that a product successfully performs the advertised function or yields the advertised benefit, but includes no suggestion of scientific proof of the product's effectiveness. *See id.*; *Removatron Int'l Corp. v. FTC*, 884 F.2d 1489, 1492 n.3 (1st Cir. 1989). An establishment claim, by contrast, suggests that a product's effectiveness or superiority has been scientifically established. *See Thompson Med. Co.*, 791 F.2d at 194; *Sterling Drug, Inc. v. FTC*, 741 F.2d 1146, 1150 (9th Cir. 1984).

The distinction between efficacy claims and establishment claims gains salience at the second step of the Commission's inquiry, which calls for determining whether the advertiser's claim is false, misleading, or unsubstantiated. If an ad conveys an efficacy claim, the advertiser must possess a "reasonable basis" for the claim. *See Pfizer Inc.*, 81 F.T.C. 23, 62 (1972). The FTC examines that question under the so-called "*Pfizer* factors," including "the type of product," "the type of claim," "the benefit of a truthful claim," "the ease of developing substantiation for the claim," "the consequences of a false claim," and "the amount of substantiation experts in the field would consider reasonable." *Daniel Chapter One*, No. 9329, 2009 WL 5160000, at *25 (U.S. Fed. Trade Comm'n Dec. 24, 2009) (citing *Pfizer*, 81 F.T.C. at 64), *aff'd*, 405 F. App'x 505 (D.C. Cir. 2010); *see also Thompson Med. Co.*, 104 F.T.C. at 821.

For establishment claims, by contrast, the Commission generally does not apply the *Pfizer* factors. *See Removatron Int'l Corp.*, 111 F.T.C. 206, 297 (1988), *aff'd*, 884 F.2d 1489 (1st Cir. 1989). Rather, the amount of substantiation needed for an establishment claim depends on whether the claim is "specific" or "non-specific." *See Thompson Med. Co.*, 791 F.2d at 194. If an establishment claim "states a specific type of substantiation," the "advertiser must possess the specific substantiation claimed." *Removatron*, 884 F.2d at 1492 n.3. If an ad instead conveys a non-specific establishment claim—e.g., an ad stating that a product's efficacy is "medically proven" or making use of "visual aids" that "clearly suggest that the claim is based upon a foundation of scientific evidence"—the advertiser "must possess evidence sufficient to satisfy the relevant scientific community of the claim's truth." *Bristol-Myers Co.*, 102 F.T.C. 21, 321 (1983), *aff'd*, 738 F.2d 554 (2d Cir. 1984). The Commission therefore "determines what evidence would in fact establish such a claim in the relevant scientific community" and "then compares the advertisers' substantiation evidence to that required by the scientific community." *Removatron*, 884 F.2d at 1498.

Even if the Commission concludes at the first step that an advertiser conveyed efficacy or establishment claims and determines at the second step that the claims qualify as false, misleading, or unsubstantiated, it can issue a finding of liability only "if the omitted information would be a material factor in the consumer's decision to purchase the product." *Am. Home Prods. Corp.*, 98 F.T.C. 136, 368 (1981), *enforced as modified*, 695 F.2d 681 (3d Cir. 1982); *see also Colgate-Palmolive*, 380 U.S. at 386-88. Here, petitioners do not dispute the materiality of POM's disease-related claims. We therefore confine our analysis to the first and second steps of the Commission's determination: its findings that petitioners'

ads conveyed efficacy and establishment claims and that those claims were false, misleading, or unsubstantiated.

B.

At the first step of its inquiry, the Commission determined that thirty-six of petitioners' advertisements and promotional materials conveyed efficacy claims asserting that POM products treat, prevent, or reduce the risk of heart disease, prostate cancer, or erectile dysfunction. The Commission further concluded that thirty-four of those ads also conveyed establishment claims representing that clinical studies substantiate the efficacy of POM products in treating, preventing, or reducing the risk of the same ailments. The Commission set forth the basis for those findings in considerable detail in an appendix to its opinion, with a separate explanation for each ad.

Those ads, as described earlier, *see supra* Part I.A, repeatedly claimed the benefits of POM's products in the treatment or prevention of heart disease, prostate cancer, or erectile dysfunction, and consistently touted medical studies ostensibly supporting those claimed benefits. The question whether "a claim of establishment is in fact made is a question of fact the evaluation of which is within the FTC's peculiar expertise." *Thompson Med. Co.*, 791 F.2d at 194; *see also Removatron*, 884 F.2d at 1496. Here, we perceive no basis for setting aside the Commission's carefully considered findings of efficacy and establishment claims as unsupported by substantial evidence.

Petitioners argue that the Commission applied overly broad claim interpretation principles by "adopt[ing] a rule that if an advertisement *correctly* references research connecting a food product to possible health benefits, it necessarily implies

the vastly broader claim that there is 'clinical proof' that the product treats, cures, or prevents a disease." Joint Reply Br. 6 (emphasis in original). We disagree with that characterization of the Commission's approach. As the Commission made clear in its opinion, "[n]ot 'every reference to a test or study necessarily gives rise to an establishment claim.'" FTC Op. at 12 (alteration omitted) (quoting *Bristol-Myers*, 102 F.T.C. at 321 n.7). Here, however, the advertisements go beyond merely describing specific research in sufficient detail to allow a consumer to judge its validity. The study results are referenced in a way that suggests they are convincing evidence of efficacy.

As the Commission separately set forth for each ad, "these ads drew a logical connection between the study results and effectiveness for the particular diseases." *Id.* at 13. Moreover, they invoked medical symbols, referenced publication in medical journals, and described the substantial funds spent on medical research, fortifying the overall sense that the referenced clinical studies establish the claimed benefits. *Id.* at 13-14. As the Commission explained, "[w]hen an ad represents that tens of millions of dollars have been spent on medical research, it tends to reinforce the impression that the research supporting product claims is established and not merely preliminary." *Id.* at 14.

Petitioners accuse the Commission of "'cherry-pick[ing]' the record by focusing on a handful of the most aggressive advertisements—most of which have not been run in over six years." Joint Reply Br. 5. There is no meaningful difference, however, between the more recent ads' reliance on medical studies and that of the earlier ads. Consider, for instance, the advertisement for POM_x Pills appearing in Playboy magazine in July 2010, less than three months before the Commission filed its complaint. *See* FTC Op. App. B fig.33. According to

that ad, POM_x is "backed by $34 million in medical research at the world's leading universities" revealing "promising results for erectile, prostate and cardiovascular health." *Id*. The ad goes on to discuss three specific studies: Dr. Padma-Nathan's erectile dysfunction study, Dr. Pantuck's PSA doubling time study, and Dr. Ornish's blood flow study. Of the first, the ad says that, "[i]n a preliminary study on erectile function, men who consumed POM Juice reported a 50% greater likelihood of improved erections as compared to placebo." The ad next asserts that "[a]n initial UCLA study on our juice found hopeful results for prostate health, reporting 'statistically significant prolongation of PSA doubling times.'" Finally, the ad states that "[a] preliminary study on our juice showed promising results for heart health"—specifically, improved "blood flow to the heart."

Materials appearing on POM websites in 2009-2010 convey substantially similar claims. The pomwonderful.com site described POM juice as "backed by" $25 million in "medical research" and clinical testing. ALJ Initial Decision at 55 ¶ 370. The website pointed to "medical results" in the categories of "cardiovascular health," "prostate health," and "erectile function." *Id.* For cardiovascular health, the webpage characterized Dr. Ornish's blood flow study as showing "improved blood flow to the heart," and Dr. Aviram's CIMT study as showing a decrease in arterial plaque from daily consumption of POM juice. *Id*. at 56 ¶ 373. Further links contained descriptions of studies "demonstrat[ing] that pomegranate juice lowers blood pressure in patients with hypertension," and "clearly demonstrat[ing] for the first time that pomegranate juice consumption by patients with carotid artery stenosis possesses anti-atherosclerotic properties." *Id.* at 56-57 ¶¶ 375-76. In the category of prostate health, the webpage described Dr. Pantuck's study as showing that men with prostate cancer

who drank pomegranate juice daily "experienced significantly slower PSA doubling times," *id.* at 56 ¶ 371, with PSA doubling time described as "an indicator of prostate cancer progression," *id.* at 58 ¶ 381. And with regard to erectile function, the webpage described Dr. Padma-Nathan's study as demonstrating that men who drank pomegranate juice "were 50% more likely to experience improved erections." *Id.* at 56 ¶ 372.

The Commission reviewed the claims in POM's ads "in light of any disclaimers or disclosures that [petitioners] actually made." FTC Op. at 44. For the 2010 Playboy ad, for instance, the Commission concluded that "at least a significant minority of reasonable consumers" would construe the ad to claim that drinking eight ounces of POM juice or ingesting one POM_x pill a day can treat, prevent, or reduce the risk of erectile dysfunction, prostate cancer, and heart disease. *Id.* App. A at A10-A11. The ad's references to the described studies as "promising," "initial" or "preliminary" did not detract from the Commission's conclusion. The Commission considered the effect of such adjectives "in the context of each ad in its entirety," explaining that those sorts of modifiers do "not neutralize the claims made when the specific results are otherwise described in unequivocally positive terms." *Id.* App. A at A2. The Commission concluded that the "use of one or two adjectives does not alter the net impression," especially "when the chosen adjectives" (such as "promising") "provide a positive spin on the studies rather than a substantive disclaimer." *Id.* at 13.

The Commission noted, though, that it might reach a different result if an ad were to incorporate an effective disclaimer, such as a statement that the "evidence in support of this claim is inconclusive." *Id.* at 44 (quoting *Pearson v. Shalala*, 164 F.3d 650, 659 (D.C. Cir. 1999)). Because

POM's ads contained no such qualifier, the Commission held petitioners to the general substantiation standard for non-specific establishment claims—i.e., the requirement that petitioners possess evidence sufficient to satisfy the relevant scientific community of the truth of their claims. Petitioners advance no persuasive ground for rejecting that approach as beyond the Commission's discretion.

C.

At the second stage of its analysis, the Commission found petitioners' efficacy and establishment claims to be deceptive due to inadequate substantiation. "In reviewing whether there is appropriate scientific substantiation for the claims made, our task is only to determine if the Commission's finding is supported by substantial evidence on the record as a whole." *Removatron*, 884 F.2d at 1497 (internal quotation marks omitted). When conducting that inquiry, we are mindful of the Commission's "special expertise in determining what sort of substantiation is necessary to assure that advertising is not deceptive." *Thompson Med. Co.*, 791 F.2d at 196.

1. For both petitioners' efficacy claims and their non-specific establishment claims, the Commission found that "experts in the relevant fields" would require one or more "properly randomized and controlled human clinical trials"—"RCTs"—in order to "establish a causal relationship between a food and the treatment, prevention, or reduction of risk" of heart disease, prostate cancer, or erectile dysfunction. FTC Op. at 22. Without at least one such RCT, the Commission concluded, POM's efficacy claims and its non-specific establishment claims were inadequately substantiated.

In reaching that conclusion, the Commission emphasized a distinction between "generalized nutritional and health

benefit claims" and "the specific disease treatment and prevention claims at issue in this case," i.e., "that the Challenged POM Products treat, prevent or reduce the risk of heart disease, prostate cancer, and ED, and that such claims are scientifically established." *Id*. at 20. The Commission declined to address the level of support required for general health or nutritional claims. *See id.* at 20-21. It instead confined its analysis to the specific disease prevention and treatment claims in question, concluding that the "expert evidence was clear that RCTs are necessary for adequate substantiation of these representations." *Id.*

The Commission additionally explained that lesser substantiation might suffice for "claims that do not assert a causal relationship." *Id.* at 23. POM's ads, though, "convey the net impression that clinical studies or trials show that a causal relation has been established between the consumption of the Challenged POM Products and its efficacy to treat, prevent or reduce the risk of the serious diseases in question." *Id.* at 22; *see, e.g.*, *id*. App. B fig.2 ("Medical studies have shown that drinking 8oz. of POM Wonderful pomegranate juice daily minimizes factors that lead to atherosclerosis, a major cause of heart disease."); *id.* App. B fig.7 ("POM Wonderful Pomegranate Juice . . . can help prevent premature aging, heart disease, stroke, Alzheimer's, even cancer."); *id.* App. B fig.20 ("Eight ounces a day is enough to keep your heart pumping."). The Commission found that "experts in the relevant fields would require RCTs . . . to establish" such a "causal relationship." *Id*. at 22-23.

The Commission examined each of the studies invoked by petitioners in their ads, concluding that the referenced studies fail to qualify as RCTs of the kind that could afford adequate substantiation. *Id.* at 28-34. Petitioners' claims therefore were deceptive. *Id.* at 34, 38. Moreover, in light of

petitioners' selective touting of ostensibly favorable study results and nondisclosure of contrary indications from the same or a later study, the Commission found that there were "many omissions of material facts in [the] ads that consumers cannot verify independently." *Id.* at 43; *see* FTC Act § 15(a)(1), 15 U.S.C. § 55(a)(1) ("[I]n determining whether any advertisement is misleading, there shall be taken into account . . . the extent to which the advertisement fails to reveal facts material in the light of such representations."). Petitioners, the Commission observed, "made numerous deceptive representations and were aware that they were making such representations despite the inconsistency between the results of some of their later studies and the results of earlier studies to which [they] refer in their ads." FTC Op. at 49.

With regard to heart disease, for instance, petitioners repeatedly touted the results of Dr. Aviram's limited CIMT study without noting the contrary findings in Drs. Ornish's and Davidson's later and larger studies. *See supra* p. 7. For prostate cancer, petitioners consistently relied on Dr. Pantuck's study of PSA doubling times but with no indication of the study's limitations, including, for instance, that the study's subjects all had undergone radical treatments associated with prolonged PSA doubling times regardless of consumption of pomegranate juice. *See supra* pp. 9-10. And in connection with erectile dysfunction, petitioners promoted the results of Dr. Padma-Nathan's study based exclusively on the non-validated, one-question GAQ measure, without acknowledging that the study showed no improvement according to the only scientifically validated measure used to assess the results (the IIEF). *See supra* pp. 11-12.

2. Petitioners challenge the Commission's factual finding that experts in the relevant fields require RCTs to

support claims about the disease-related benefits of POM's products. We conclude that the Commission's finding is supported by substantial record evidence. That evidence includes written reports and testimony from medical researchers stating that experts in the fields of cardiology and urology require randomized, double-blinded, placebo-controlled clinical trials to substantiate any claim that a product treats, prevents, or reduces the risk of disease. *See* J.A. 1018 (expert report of Dr. James Eastham of Memorial Sloan-Kettering Cancer Center); *id*. at 1048-49 (expert report of Dr. Frank Sacks of Harvard Medical School and Harvard School of Public Health); *id*. at 1081 (expert report of Dr. Arnold Melman of Albert Einstein College of Medicine); *id*. at 1104 (expert report of Dr. Meir Jonathan Stampfer of Harvard Medical School and Harvard School of Public Health).

The Commission drew on that expert testimony to explain why the attributes of well-designed RCTs are necessary to substantiate petitioners' claims. FTC Op. at 23-24. A control group, for example, "'allows investigators to distinguish between real effects from the intervention, and other changes, including those due to the mere act of being treated ('placebo effect') [and] the passage of time.'" *Id.* at 23 (quoting ALJ Initial Decision at 90 ¶ 611). Random assignment of a study's subjects to treatment and control groups "increases the likelihood that the treatment and control groups are similar in relevant characteristics, so that any difference in the outcome between the two groups can be attributed to the treatment." *Id.* (quoting ALJ Initial Decision at 90 ¶ 612). And when a study is "double-blinded" (i.e., when neither the study participants nor the investigators know which patients are in the treatment group and which patients are in the control group), it is less likely that participants or

investigators will consciously or unconsciously take actions potentially biasing the results. *Id.* at 24.

Petitioners assert that certain of the Commission's experts "admit[ted]" that RCTs are not always necessary to substantiate claims about the health benefits of foods and nutrients. Tupper Br. 41. Petitioners take the experts' remarks out of context. For example, Dr. Meir Jonathan Stampfer acknowledged having made recommendations concerning diet and exercise "even when the data are not supported by randomized clinical trials," but he also emphasized that a health recommendation based on the "best available evidence" is "not the same as stating that a causal link has been established." J.A. 1218 (deposition testimony). Dr. Frank Sacks likewise acknowledged that "well-conducted, well-executed observational research is very important" for evaluating foods and nutrients, but he emphasized that a causal link between a food or nutrient and a reduction in disease risk "cannot be proven from an observational [i.e., non-RCT] study." *Id.* at 1240 (deposition testimony). POM nonetheless claimed a scientifically established, causal link between its products and various disease-related benefits on the basis of studies that were not randomized or placebo-controlled. *See, e.g.*, FTC Op. App. B fig.2 (asserting, on basis of Dr. Aviram's non-randomized and non-placebo-controlled CIMT study, that "[m]edical studies have shown that drinking 8oz. of POM Wonderful pomegranate juice daily minimizes factors that lead to atherosclerosis (plaque buildup in the arteries), a major cause of heart disease"); *id.* App. B fig.3 (stating, on basis of same study, that "a clinical pilot study shows that an 8 oz. glass of POM Wonderful 100% Pomegranate Juice, consumed daily, reduces plaque in the arteries up to 30%"); *id.* App. B fig.9 (claiming, on basis of Dr. Pantuck's non-controlled study, that pomegranate juice

consumption "prolonged post-prostate surgery PSA doubling time").

Petitioners observe that some of their own experts offered divergent views about the need for RCTs to substantiate disease-related claims for food products. But section 5(c) of the FTC Act, 15 U.S.C. § 45(c), which addresses judicial review, "forbids a court to 'make its own appraisal of the testimony, picking and choosing for itself among uncertain and conflicting inferences.'" *Ind. Fed'n of Dentists*, 476 U.S. at 454 (quoting *FTC v. Algoma Lumber Co.*, 291 U.S. 67, 73 (1934)). The standard set forth in section 5(c) is "essentially identical" to the "'substantial evidence' standard for review of agency factfinding," *id.*, and "does not permit the reviewing court to weigh the evidence, but only to determine that there is in the record such relevant evidence as a reasonable mind might accept as adequate to support a conclusion." *Am. Home Prods. Corp. v. FTC*, 695 F.2d 681, 686 (3d Cir. 1982) (quoting *Steadman v. SEC*, 450 U.S. 91, 99 (1981)). In asking us to substitute our own appraisal of the expert testimony for the Commission's, petitioners ask us to do what section 5(c) forbids. *See Thompson Med. Co.*, 791 F.2d at 196.

3. Petitioners contend that it is "too onerous" to require RCTs to substantiate disease-related claims about food products "because of practical, ethical, and economic constraints on RCT testing in that context." Joint Reply Br. 32. The Commission was unpersuaded by that argument, *see* FTC Op. at 24-25, and so are we.

As for the practical constraints on double-blinded, placebo-controlled, randomized trials, petitioners say that it is "difficult, if not impossible, to 'blind' a fruit." POM Br. 13. But that argument does not apply to two of the three products

at issue—POM_x Liquid and POM_x Pills—which are dietary supplements amenable to blinding. And as applied to POM juice, petitioners' argument is called into question by the fact that several juice studies they sponsored were double-blinded and placebo-controlled, including studies led by Dr. Ornish, Dr. Davidson, and Dr. Padma-Nathan. *See, e.g.*, Davidson et al., *supra*, at 937 (explaining that beverage with "similar color and energy content" as pomegranate juice could be "labeled so that neither subjects nor staff members were aware" whether beverage was placebo). In any event, the Commission required double-blinding only "when feasible," acknowledging that, "in some instances . . . it may not be possible to conduct blinded clinical trials of food products." FTC Op. at 24.

As for the ethical constraints on randomized controlled trials, petitioners say that it is "impossible to create a zero intake group for nutrients in an ethical manner—doctors cannot, for example, ethically deprive a control group of patients of all Vitamin C for a decade to determine whether Vitamin C helps prevent cancer." POM Br. 15 (internal quotation marks omitted). Many of the challenged ads, however, made claims about the short-term benefits of consuming POM products. *See, e.g.*, FTC Op. App. B fig.1 (asserting, on basis of ten-patient study with no control group, that "[p]omegranate juice inhibited [angiotensin converting enzyme (ACE)] by 36% after two weeks of consumption" and that "[i]nhibition of ACE lessens the progression of atherosclerosis"). And whether or not it may be unethical to tell patients in a control group to stop consuming vitamin C, petitioners give us no reason to believe that it would be unethical to create a zero intake group for pomegranate juice.

We acknowledge that RCTs may be costly, although we note that the petitioners nonetheless have been able to sponsor

dozens of studies, including several RCTs. Yet if the cost of an RCT proves prohibitive, petitioners can choose to specify a lower level of substantiation for their claims. As the Commission observed, "the need for RCTs is driven by the claims [petitioners] have chosen to make." *Id.* at 25. An advertiser who makes "express representations about the level of support for a particular claim" must "possess the level of proof claimed in the ad" and must convey that information to consumers in a non-misleading way. *Thompson Med. Co.*, 791 F.2d at 194. An advertiser thus still may assert a health-related claim backed by medical evidence falling short of an RCT if it includes an effective disclaimer disclosing the limitations of the supporting research. Petitioners did not do so.

D.

Petitioners argue that the substantiation standard applied by the Commission to POM's establishment and efficacy claims amounts to a new legal rule adopted in violation of the Administrative Procedure Act's notice-and-comment requirements for rulemaking. *See* Administrative Procedure Act § 4, 5 U.S.C. § 553; FTC Act § 18(a)-(b), 15 U.S.C. § 57a(a)-(b) (APA notice-and-comment requirements apply to FTC rules). We disagree. The Commission proceeded in this case via adjudication rather than rulemaking. And it "is well settled that an agency 'is not precluded from announcing new principles in an adjudicative proceeding,'" and that "'the choice between rulemaking and adjudication lies in the first instance within the agency's discretion.'" *Cassell v. FCC*, 154 F.3d 478, 486 (D.C. Cir. 1998) (alteration omitted) (quoting *NLRB v. Bell Aerospace Co. Div. of Textron Inc.*, 416 U.S. 267, 294 (1974)); *see also Qwest Servs. Corp. v. FCC*, 509 F.3d 531, 536-37 (D.C. Cir. 2007).

Petitioners point to *Appalachian Power Co. v. EPA*, 208 F.3d 1015, 1024 (D.C. Cir. 2000), where we said that "an agency may not escape the notice and comment requirements . . . by labeling a major substantive legal addition to a rule a mere interpretation." *Appalachian Power*, however, involved a guidance document that "in effect amended" a regulation, which the agency could not "legally do without complying with the rulemaking procedures." *Id.* at 1028. Here, the Commission did not effectively amend a notice-and-comment regulation. It instead validly proceeded by adjudication. As we have explained, the "fact that an order rendered in an adjudication may affect agency policy and have general prospective application does not make it rulemaking subject to APA section 553 notice and comment." *Conference Grp., LLC v. FCC*, 720 F.3d 957, 966 (D.C. Cir. 2013) (citation and internal quotation marks omitted).

The Commission's decision, in any event, does not involve a "major substantive legal addition" to its substantiation standards. *Appalachian Power Co.*, 208 F.3d at 1024. With respect to POM's establishment claims, the substantiation standard applied by the Commission is consistent with Commission precedent. When an advertiser represents that claims have been "scientifically established," the FTC has long held the advertiser to "the level of evidence required to convince the relevant scientific community of the claim's truthfulness." *Bristol-Meyers*, 102 F.T.C. at 317-18; *accord Removatron*, 111 F.T.C. at 297-99; *Thompson Med. Co.*, 104 F.T.C. at 821-22 & n.59. And the Commission has required RCTs to substantiate establishment claims in other contexts. *See, e.g., Am. Home Prods. Corp.*, 98 F.T.C. at 200-06. With respect to POM's efficacy claims, the Commission arrived at its RCT substantiation requirement by applying the traditional *Pfizer* factors. That conclusion coheres with past Commission decisions applying *Pfizer*, including *Pfizer* itself.

See Pfizer, 81 F.T.C. at 66 (finding that "for a test, standing alone, to provide a reasonable basis" for a claim that a nonprescription product is effective in treating minor burns and sunburns, "the test should be an adequate and well-controlled scientific test," and noting "strong desirability" that the test be "double-blind"); *Thompson Med. Co.*, 104 F.T.C. at 826 (applying "six *Pfizer* factors" and concluding that the "proper level of substantiation for . . . efficacy claims" for topical analgesic marketed to treat minor arthritis is "two well-controlled clinical tests").

E.

Matthew Tupper, for his part, challenges the Commission's decision to hold him individually liable (along with the Resnicks) for POM's deceptive acts and practices. Tupper, who became POM's chief operating officer in 2003 and served as its president from 2005 to 2011, contends that he should not be held individually liable because Lynda Resnick, not he, had the "final say" on the ads. Tupper Br. 33.

Tupper cites no decisions supporting his assertion that individual liability under the FTC Act extends only to those with "final say" over deceptive acts or practices. The other circuits to address the issue have determined that "[i]ndividuals may be liable for FTC Act violations committed by a corporate entity if the individual 'participated directly in the deceptive practices or acts or had authority to control them.'" *FTC v. IAB Mktg. Assocs., LP*, 746 F.3d 1228, 1233 (11th Cir. 2014) (alteration omitted) (quoting *FTC v. Amy Travel Serv., Inc.*, 875 F.2d 564, 573 (7th Cir. 1989)); *accord FTC v. QT, Inc.*, 512 F.3d 858, 864 (7th Cir. 2008); *FTC v. Freecom Commc'ns, Inc.*, 401 F.3d 1192, 1204 (10th Cir. 2005); *FTC v. Publ'g Clearing House, Inc.*, 104 F.3d

1168, 1170 (9th Cir. 1997). It is undisputed that Tupper participated directly in meetings about advertising concepts and content, reviewed and edited ad copy, managed the day-to-day affairs of POM's marketing team, and possessed hiring and firing authority over the head of POM's marketing department. Even assuming that "authority to control" is a prerequisite for individual liability under the FTC Act, we would still affirm based on the Commission's unchallenged finding that Tupper "had the authority to determine which advertisements should run." FTC Op. at 53.

Tupper next argues that the Commission failed to prove his *knowledge* that POM's ads conveyed misleading claims. But the FTC has been required to demonstrate an individual's knowledge only when seeking equitable monetary relief. *See FTC v. Network Servs. Depot, Inc.*, 617 F.3d 1127, 1138 (9th Cir. 2010); *Freecom Commc'ns*, 401 F.3d at 1197-203, 1207. In this case, the sole remedy imposed by the FTC was injunctive relief. And when the Commission does not seek restitution or monetary penalties, the FTC Act "imposes a strict liability standard" and "creates no exemption . . . for unwitting disseminators of false advertising." *Porter & Dietsch, Inc. v. FTC*, 605 F.2d 294, 309 (7th Cir. 1979); *see Feil v. FTC*, 285 F.2d 879, 896 (9th Cir. 1960); *Koch v. FTC*, 206 F.2d 311, 317 (6th Cir. 1953); *Parke, Austin & Lipscomb, Inc. v. FTC*, 142 F.2d 437, 440 (2d Cir. 1944).

Finally, Tupper contends that there is "no justification" for applying the Commission's order to him because he has "voluntarily retired from his position at POM." Tupper Br. 37. That argument occupied just two sentences of his opening brief, and he referenced no precedent supporting it until his reply brief. Joint Reply Br. 43-44 (citing *FTC v. Accusearch Inc.*, 570 F.3d 1187, 1201 (10th Cir. 2009); *Borg-Warner Corp. v. FTC*, 746 F.2d 108, 110 (2d Cir. 1984)). When a

litigant's opening brief presents an argument "in conclusory fashion and without visible support," we have discretion to deem the argument forfeited. *See Bd. of Regents of the Univ. of Wash. v. EPA*, 86 F.3d 1214, 1221 (D.C. Cir. 1996). Tupper's argument fails on the merits in any event. Injunctive relief may be inappropriate if the affected parties "have not shown a propensity toward violating" the statute and "nothing in the record . . . suggests the likelihood or even the possibility" of further violations. *Borg-Warner*, 746 F.2d at 110-11. But the Commission found that petitioners, including Tupper, "have a demonstrated propensity to misrepresent to their advantage the strength and outcomes of scientific research" and "engaged in a deliberate and consistent course of conduct—no mere isolated incident or mistake." FTC Op. at 51. Additionally, there is no assurance that Tupper will not return to POM or join another company that markets food products or dietary supplements.

III.

Having rejected petitioners' statutory claims, we now turn to their constitutional arguments. Petitioners challenge both the Commission's liability determination and its remedy on First Amendment grounds. We reject both challenges except insofar as the Commission in its remedial order imposed an across-the-board, two-RCT substantiation requirement for any future disease-related claims by petitioners.

A.

"For commercial speech to come within [the First Amendment], it at least must concern lawful activity and not be misleading." *Cent. Hudson Gas & Elec. Corp. v. Pub. Serv. Comm'n*, 447 U.S. 557, 566 (1980). Consequently,

"[m]isleading advertising may be prohibited entirely." *In re R. M. J.*, 455 U.S. 191, 203 (1982).

In imposing liability against petitioners, the Commission found that POM's ads are entitled to no First Amendment protection because they are "deceptive and misleading." FTC Op. at 44. Petitioners ask us to review that finding de novo in light of the First Amendment context, *see Bose Corp. v. Consumers Union of U.S.*, 466 U.S. 485, 505 (1984), and to overturn the Commission's decision to impose liability. Our precedents, however, call for reviewing the Commission's factual finding of a deceptive claim under the ordinary (and deferential) substantial-evidence standard, even in the First Amendment context. *Novartis Corp. v. FTC*, 223 F.3d 783, 787 n.4 (D.C. Cir. 2000); *FTC v. Brown & Williamson Tobacco Corp.*, 778 F.2d 35, 41 n.3 (D.C. Cir. 1985); *see also Kraft*, 970 F.2d at 316 (cited in *Novartis Corp.*, 223 F.3d at 787 n.4). We conclude that the Commission's findings of deception are supported by substantial evidence in the record; and we would reach the same conclusion even if we were to exercise de novo review, at least with respect to the nineteen ads determined misleading by the administrative law judge and held by the Commission to form a sufficient basis for its liability determination and remedial order.

We have addressed eighteen of those nineteen ads in the course of our earlier discussion, and we affirm the Commission's determination that those ads were deceptive for the reasons set forth above and in the FTC's opinion. *See* FTC Op. App. A at A3-A7, A9-A14; *id*. App. B figs.1, 2, 3, 4, 6, 7, 8, 9, 10, 15, 16, 17, 21, 27, 33, 37, 38, 39. The sole remaining ad is one carried in two magazines in 2004 and 2005. It features an intravenous tube running through a bottle of POM juice alongside the headline "Life support." *Id*. App. B fig.5. The ad says that POM juice "has more naturally

occurring antioxidants than any other drink," and that "[t]hese antioxidants fight hard against free radicals that can cause heart disease" and "even cancer." *Id*. The ad then tells readers that, if they "[j]ust drink eight ounces a day," they will "be on life support—in a good way." *Id*.

The administrative law judge concluded that, "[b]ased on the overall, common-sense, net impression" of the ad, "a significant minority" of "reasonable" consumers "would interpret [the ad] to be claiming that drinking eight ounces of POM Juice daily prevents or reduces the risk of heart disease." ALJ Initial Decision at 69 ¶ 455. The full Commission adopted the administrative law judge's findings about the net impression conveyed by the ad, and we see no basis to overturn that conclusion. At the time, there was insufficient support for an unqualified efficacy claim of a link between daily consumption of pomegranate juice and prevention of heart disease. As a result, insofar as the FTC imposed liability on petitioners for the nineteen ads found to be deceptive by the administrative law judge, the Commission sanctioned petitioners for misleading speech unprotected by the First Amendment.

B.

Finally, we address petitioners' First Amendment challenge to the Commission's injunctive order. Part III of the order imposes a baseline requirement applicable to all of petitioners' ads. It bars representations about a product's general health benefits "unless the representation is non-misleading" and backed by "competent and reliable scientific evidence that is sufficient in quality and quantity" to "substantiate that the representation is true." FTC Final Order at 3. For purposes of that baseline requirement, "competent and reliable evidence" means studies that are "generally

accepted in the profession to yield accurate and reliable results." *Id.*

Part I of the order, meanwhile, imposes heightened requirements in the specific context of claims about the treatment or prevention of "any disease" (including, but not limited to, heart disease, prostate cancer, and erectile dysfunction). *Id.* at 2. Such disease-related claims, like the broader category of health claims covered by Part III, must be "non-misleading" and supported by "competent and reliable scientific evidence." *Id.* But "competent and reliable scientific evidence" is more narrowly defined for purposes of Part I to consist of "at least two randomized and controlled human clinical trials (RCTs)" that "yield statistically significant results" and are "double-blinded" whenever feasible. *Id.* In short, Part III's baseline requirement for all health claims does not require RCT substantiation, whereas the specific requirements in Part I for disease-related claims not only contemplate RCT substantiation, but call for—as a categorical matter—two RCTs.

The Commission clarified in a footnote of its brief that Part I's blanket, two-RCT-substantiation requirement for disease claims attaches only to *unqualified* representations. FTC Br. 73 n.33. But the evident leeway to make "effectively *qualified*" disease claims without two RCTs, *id.*, appears to be highly circumscribed. Representations characterizing a study's results as "preliminary" or "initial"—even if describing a gold-standard RCT yielding results with an extremely high degree of statistical significance—would fail to count as adequately qualified and thus would be prohibited. *See* FTC Op. App. A at A2. Rather, an ad apparently would need to contain a disclaimer stating "unambiguously" that the evidence is "inconclusive" or that "additional research is necessary," FTC Br. 10, 19, even if the ad is substantiated by

a well-designed RCT that experts uniformly consider to be conclusive, and regardless of the amount and quality of additional supporting evidence other than RCTs. Short of such a disclaimer, a disease-related claim faces a categorical bar unless substantiated by two RCTs.

Petitioners challenge the remedial order's blanket, two-RCT-substantiation requirement under the First Amendment. They contend, and the Commission accepts, that their challenge should be examined under the general test for commercial speech restrictions set out in *Central Hudson*, 447 U.S. at 566. *See* Joint Reply Br. 39-40; FTC Br. 74.

Central Hudson first requires that the "asserted governmental interest [be] substantial." 447 U.S. at 566. The Supreme Court has made clear that the governmental "interest in ensuring the accuracy of commercial information in the marketplace is substantial." *Edenfield v. Fane*, 507 U.S. 761, 769 (1993). The Commission asserts that its remedial order aims to advance that concededly substantial interest, satisfying *Central Hudson*'s first prong.

With regard to the means by which the Commission seeks to further its asserted interest, *Central Hudson* requires that a challenged restriction "directly advance[] the governmental interest" and that it "is not more extensive than is necessary to serve that interest." 447 U.S. at 566. Here, insofar as the Commission's order imposes a general RCT-substantiation requirement for disease claims—i.e., without regard to any particular number of RCTs—the order satisfies those tailoring components of *Central Hudson* review.

In finding petitioners liable for deceptive ads, the Commission determined that petitioners' efficacy and establishment claims were misleading because they were

unsubstantiated by RCTs. We have upheld that approach in this opinion. Requiring RCT substantiation as a forward-looking remedy is perfectly commensurate with the Commission's assessment of liability for petitioners' past conduct: if past claims were deceptive in the absence of RCT substantiation, requiring RCTs for future claims is tightly tethered to the goal of preventing deception. To be sure, the liability determination concerned claims about three specific diseases whereas the remedial order encompasses claims about any disease. But that broadened scope is justified by petitioners' demonstrated propensity to make deceptive representations about the health benefits of their products, and also by the expert testimony supporting the necessity of RCTs to establish causation for disease-related claims generally. *See* FTC Op. at 22, 35-36. For purposes of *Central Hudson* scrutiny, then, the injunctive order's requirement of *some* RCT substantiation for disease claims directly advances, and is not more extensive than necessary to serve, the interest in preventing misleading commercial speech.

We reach the opposite conclusion insofar as the remedial order mandates *two* RCTs as an across-the-board requirement for any disease claim. *Central Hudson* "requires something short of a least-restrictive-means standard," *Board of Trustees v. Fox*, 492 U.S. 469, 477 (1989), but the Commission still bears the burden to demonstrate a "reasonable fit" between the particular means chosen and the government interest pursued, *id.* at 480. *See Am. Meat Inst. v. U.S. Dep't of Agric.*, 760 F.3d 18, 26-27 (D.C. Cir. 2014) (en banc). Here, the Commission fails adequately to justify a categorical floor of two RCTs for any and all disease claims. It of course is true that, all else being equal, two RCTs would provide more reliable scientific evidence than one RCT, affording added assurance against misleading claims. It is equally true that three RCTs would provide more certainty than two, and four

would yield more certainty still. But the Commission understandably does not claim a myopic interest in pursuing scientific certitude to the exclusion of all else, regardless of the consequences.

Here, the consequences of mandating more than one RCT bear emphasis. Requiring additional RCTs without adequate justification exacts considerable costs, and not just in terms of the substantial resources often necessary to design and conduct a properly randomized and controlled human clinical trial. If there is a categorical bar against claims about the disease-related benefits of a food product or dietary supplement in the absence of two RCTs, consumers may be denied useful, truthful information about products with a demonstrated capacity to treat or prevent serious disease. That would subvert rather than promote the objectives of the commercial speech doctrine. *See Edenfield*, 507 U.S. at 766.

Consider, for instance, a situation in which the results of a large-scale, perfectly designed and conducted RCT show that a dietary supplement significantly reduces the risk of a particular disease, with the results demonstrated to a very high degree of statistical certainty (i.e., a very low *p*-value)—so much so that experts in the relevant field universally regard the study as conclusively establishing clinical proof of the supplement's benefits for disease prevention. Perhaps, moreover, a wealth of medical research and evidence apart from RCTs—e.g., observational studies—reinforces the results of the blue-ribbon RCT. In that situation, there would be a substantial interest in assuring that consumers gain awareness of the dietary supplement's benefits and the supporting medical research (and without any qualifiers stating, misleadingly, that the evidence is "inconclusive," *see supra* p. 38). After all, as the Food and Drug Administration has explained in past guidance to the industry, "[a] single

large, well conducted and controlled clinical trial could provide sufficient evidence to establish a substance/disease relationship, provided that there is a supporting body of evidence from observational or mechanistic studies." U.S. Food & Drug Admin., *Guidance for Industry: Significant Scientific Agreement in the Review of Claims for Conventional Foods and Dietary Supplements* 5 (Dec. 1999), 1999 WL 33935287 (withdrawn 2009).

The two-RCT requirement in the Commission's order brooks no exception for those circumstances. No matter how robust the results of a completed RCT, and no matter how compelling a battery of supporting research, the order would always bar any disease-related claims unless petitioners clear the magic line of two RCTs. The Commission has elsewhere explained to industry advertisers that, "[i]n most situations, the quality of studies will be more important than quantity." U.S. Fed. Trade Comm'n, *Dietary Supplements: An Advertising Guide for Industry* 10 (Apr. 2001), *available at* http://www.business.ftc.gov/documents/bus09-dietary-supplements-advertising-guide-industry. The blanket, two-RCT substantiation requirement at issue here is out of step with that understanding.

The Commission fails to demonstrate how such a rigid remedial rule bears the requisite "reasonable fit" with the interest in preventing deceptive speech. *Fox*, 492 U.S. at 480; *see also Am. Meat Inst.*, 760 F.3d at 26. In the liability portion of its opinion, the Commission went to great lengths to explain why RCTs, rather than less demanding studies, are required to substantiate the sorts of causal claims petitioners asserted in the past. But the Commission stressed that it "need not, and does not, reach the question of the number of RCTs needed to substantiate the claims made." FTC Op. at 3. The Commission nonetheless imposed a categorical, two-

RCT substantiation requirement in the remedial portion of its opinion. *Id.* at 51. As justification for that decision, the Commission tendered two grounds, in a brief, five-sentence explanation. Neither of the grounds (nor both together) adequately justifies the Commission's blanket two-RCT requirement.

First, the Commission asserts that a two-RCT requirement is consistent with its precedent. The fact that the Commission may have imposed a remedy in the past, however, does not necessarily establish the closeness of its fit to a new set of facts. And here, we view the Commission's history with a two-RCT remedy to cut against, not in favor of, its imposition of a two-RCT requirement for all disease claims. It is true that this Court observed, almost thirty years ago, that the "FTC has usually required two well-controlled clinical tests" before certain "non-specific establishment claim[s] may be made." *Thompson Med. Co.*, 791 F.2d at 194. But all of the cases cited in support of that observation, like *Thompson* itself, involved a highly specific type of representation: establishment claims about the comparative efficacy of over-the-counter analgesics. *See Sterling Drug, Inc.*, 741 F.2d at 1152-53; *Bristol Myers Co. v. FTC*, 738 F.2d 554, 558-59 (2d Cir. 1984); *Am. Home Prods. Corp.*, 695 F.2d at 691-93. The decision to require two well-controlled clinical studies was confined to a particular type of claim about a particular product—the comparative ability of analgesics to afford pain relief. *See, e.g.*, *Thompson Med. Co.*, 791 F.2d at 192. And the decision came after extended analysis of considerations specific to that context. *See Am. Home Prods. Corp.*, 98 F.T.C. at 201-06.

In particular, due to the subjective nature of pain sensitivity, the Commission concluded that "the elements of a well-controlled clinical trial" are especially important in the

case of analgesics. *Thompson Med. Co.*, 104 F.T.C. at 720. That is even more true in a "comparative drug trial," in which the subjectivity of pain is compounded by the need to qualify the relative effect of two or more alternate treatments. *See id.* at 719-25. The Commission also found significant that FDA panels on analgesics (as well as the medical scientific community) "require[] replication of the results of a clinical test involving an analgesic drug." *Id.* at 720-21. For all of those reasons, the Commission concluded that "[t]wo or more independently conducted, well-controlled clinical studies are required to establish the comparative efficacy of [over-the-counter] analgesics for the relief of mild to moderate pain." *Am. Home Prods. Corp.*, 98 F.T.C. at 201; *see also Thompson Med. Co.*, 104 F.T.C. at 719. Rather than supporting the imposition of a two-RCT mandate as routinely necessary to prevent the misleading of consumers, *Thompson* suggests that the Commission has imposed two-RCT requirements only in narrow circumstances based on particularized concerns.

More recent Commission action does not demonstrate otherwise. After being asked at oral argument to identify two-RCT remedial orders other than those discussed in *Thompson*, the Commission produced a handful of examples in a post-argument submission. *See* FTC 28(j) Letter at 2 (May 5, 2014). Most of the examples are consent orders—entered without litigation or explanation of the Commission's reasoning—providing little insight into why two RCTs would be required to prevent a claim from being misleading. *See L'Occitane, Inc.*, No. C-4445, 2014 WL 1493613 (U.S. Fed. Trade Comm'n Mar. 27, 2014); *Dannon Co., Inc.*, No. C-4313, 2011 WL 479884 (U.S. Fed. Trade Comm'n Jan. 31, 2011); *Nestle Healthcare Nutrition, Inc.*, No. C-4312, 2011 WL 188928 (U.S. Fed. Trade Comm'n Jan. 12, 2011). The other examples impose two RCTs for only some subset of future claims, while requiring less support for other claims.

See Schering Corp., 118 F.T.C. 1030, 1122-23 (1994) (requiring generally acceptable scientific evidence for some claims and two RCTs for others); *Jerome Milton, Inc.*, 110 F.T.C. 104, 116 (1987) (requiring one RCT or generally acceptable scientific evidence for some claims and two RCTs for others).

Outside of those examples, several orders over the past decade require only "competent and reliable scientific evidence"—not necessarily RCTs, let alone two RCTs—to substantiate disease claims akin to those made by petitioners. *See, e.g.*, *Tropicana Prods., Inc.*, 140 F.T.C. 176, 184-85 (2005); *Unither Pharma, Inc.*, 136 F.T.C. 145, 295-96 (2003). And in other recent orders, the Commission has imposed a one-RCT remedy. *See, e.g.*, *FTC v. Reebok Int'l Ltd.*, No. 1:11-cv-02046-DCN, slip op. at 5-6 (N.D. Ohio Sept. 29, 2011). Indeed, in *Removatron* the Commission itself modified an ALJ's initial order to require one RCT rather than two. 111 F.T.C. at 206. In short, the Commission's precedents suggest that two-RCT remedial provisions are only selectively imposed in specific circumstances based on particular concerns.

The Commission observes that certain expert testimony in this case "recognized the need for consistent results in independently-replicated studies," with one of its experts noting the possibility that the results of a single RCT "may be due to chance or may not be generalizable due to the uniqueness of the study sample." FTC Op. at 51 (internal quotation marks omitted). But insofar as the results of any particular RCT may be suspect due to deficiencies in the sample or trial, the baseline requirement for health-related claims independently bars any representations unless supported by "competent and reliable scientific evidence that . . . is sufficient to substantiate that the representation is true,"

which in turn requires that a study be "generally accepted in the profession to yield accurate and reliable results." FTC Final Order at 3. In any event, the Commission's own expert testimony—as described by the Commission itself—weighs against imposing a categorical, two-RCT-substantiation requirement for all disease claims. As the Commission explained, expert testimony about the need for two RCTs was addressed to one particular disease, whereas one RCT could suffice for the other two examined diseases: "experts testified that two RCTs are necessary to substantiate the heart disease claims at issue, while the prostate cancer and ED claims can be substantiated with at least one RCT." FTC Op. at 3. The Commission nonetheless imposed a categorical, two-RCT requirement for *all* disease claims, regardless of the quality of any single RCT or the strength of other medical evidence.

Finally, the Commission justifies its two-RCT requirement on the ground that petitioners "have a demonstrated propensity to misrepresent to their advantage the strength and outcomes of scientific research" and "have engaged in a deliberate and consistent course of conduct." *Id.* at 51. But by definition, every party subjected to a final FTC order has been found to have engaged in some unlawful advertising practice. The Commission does not explain how the two-RCT requirement is reasonably linked to the particular history of petitioners' wrongdoing. The Commission does highlight petitioners' history of selectively drawing on favorable studies while disregarding unfavorable results. *Id*. at 49. To the extent the two-RCT remedy aims to prevent petitioners from misleadingly highlighting favorable results alone, however, the order separately requires petitioners to base any representations on "competent and reliable scientific evidence that, *when considered in light of the entire body of relevant and reliable scientific evidence*, is sufficient to substantiate that the representation is true." FTC

Final Order at 2 (emphasis added). With that baseline already established by the order, the contribution of the two-RCT requirement to the order's effectiveness in this regard is far from clear.

For those reasons, we hold that the Commission's order is valid to the extent it requires disease claims to be substantiated by at least one RCT. But it fails *Central Hudson* scrutiny insofar as it categorically requires two RCTs for all disease-related claims. That is not at all to say that the Commission would be barred from imposing a two-RCT-substantiation requirement in any circumstances. *See Thompson Med. Co.*, 791 F.2d at 193-96. Rather, the Commission has failed in this case adequately to justify an across-the-board two-RCT requirement for all disease claims by petitioners.

* * * * *

For the foregoing reasons, Part I of the Commission's remedial order will be modified to require petitioners to possess at least one RCT before making disease claims covered by that provision and, as modified, enforced. We deny the petition for review in all other respects.

So ordered.