plemented, presumably after large effort and at great expense must be retroactively disapproved. These and other problems are bound to arise as a result of what I consider a mistake in judicial analysis.

For these reasons, I respectfully dissent.

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POM WONDERFUL, LLC, et al., Petitioners

v.

FEDERAL TRADE COMMISSION, Respondent.

No. 13…1060.

United States Court of Appeals, District of Columbia Circuit.

Argued May 2, 2014.

Decided Jan. 30, 2015.

Rehearing En Banc Denied May 28, 2015.

Background: Federal Trade Commission (FTC) filed administrative complaint charging that marketer and related parties had made false, misleading, and unsubstantiated representations in violation of Federal Trade Commission Act, held them liable, and ordered them to cease and desist from making misleading and inadequately supported claims. Respondents petitioned for judicial review.

Holdings: The Court of Appeals, Srinivasan, Circuit Judge, held that:

(1) substantial evidence supported findings by FTC that advertisements for pomegranate-based products conveyed efficacy and establishment claims;

(2) FTC had discretion to hold marketer to general substantiation standard for non-specific establishment claims;

(3) substantial evidence supported conclusion by FTC that properly randomized and controlled human clinical trials (RCTs) were required to adequately substantiate its efficacy claims and its non-specific establishment claims;

(4) substantial evidence supported conclusion by FTC that medical studies referenced by marketer did not qualify as RCTs of kind that could afford adequate substantiation of marketer•s claims;

(5) substantial evidence supported factual finding by FTC that experts in relevant fields required RCTs to support claims about disease-related benefits of marketer•s products;

(6) FTC did not have obligation to adhere to notice-and-comment rulemaking procedures before imposing liability;

(7) person who had authority to determine which advertisements were published could be held individually liable, although he did not have ••final say•• on those advertisements; and

(8) order that required corporation to gain support of at least one RCT before claiming causal relationship between consumption of pomegranate-based products and treatment or prevention of any disease did not violate First Amendment.

Affirmed as modified.

2. Antitrust and Trade Regulation O163

When determining whether an advertisement is deceptive in violation of the Federal Trade Commission (FTC) Act, the FTC considers: (1) what claims are conveyed in the advertisement, (2) whether those claims are false, misleading, or unsubstantiated, and (3) whether the claims are material to prospective consumers. Federal Trade Commission Act, § 5, 15 U.S.C.A. § 45.

3. Antitrust and Trade Regulation O163

At the first step in the three-step inquiry for determining whether an advertisement is deceptive in violation of the Federal Trade Commission (FTC) Act, the Commission deems an advertisement to convey a claim if consumers acting reasonably under the circumstances would interpret the advertisement to contain that message; the Commission examines the overall net impression left by an advertisement, and considers whether at least a significant minority of reasonable consumers would likely interpret the advertisement to assert the claim. Federal Trade Commission Act, § 5, 15 U.S.C.A. § 45.

4. Antitrust and Trade Regulation O163

In the analysis of whether an advertisement is deceptive in violation of the Federal Trade Commission (FTC) Act, when identifying the claims made by an advertisement, the Commission distinguishes between ••efficacy claims•• and ••establishment claims••; 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, whereas an establishment claim, by contrast, suggests that a product•s effectiveness or superiority has been scientifically established. Federal Trade Commission Act, § 5, 15 U.S.C.A. § 45.

5. Antitrust and Trade Regulation O163

In the analysis of whether an advertisement is deceptive in violation of the Federal Trade Commission (FTC) Act, if an advertisement conveys an efficacy claim, the advertiser must possess a reasonable basis for the claim; 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. Federal Trade Commission Act, § 5, 15 U.S.C.A. § 45.

6. Antitrust and Trade Regulation O163, 222

In the analysis of whether an advertisement is deceptive in violation of the Federal Trade Commission (FTC) Act, if an establishment claim states a specific type of substantiation, the advertiser must possess the specific substantiation claimed, but if an advertisement instead conveys a non-specific establishment claim, e.g., an advertisement 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

that advertisements were deceptive in violation of FTC Act, where advertisements drew logical connection between study results and effectiveness for treating, preventing, or reducing risk of various ailments, and they invoked medical symbols, referenced publication in medical journals, and described substantial funds spent on medical research. Federal Trade Commission Act, § 5, 15 U.S.C.A. § 45.

8. Antitrust and Trade Regulation O312

In the analysis of whether an advertisement is deceptive in violation of the Federal Trade Commission (FTC) Act, 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. Federal Trade Commission Act, § 5, 15 U.S.C.A. § 45.

9. Antitrust and Trade Regulation O222

Federal Trade Commission (FTC) had discretion to hold marketer to general substantiation standard for non-specific establishment claims, i.e., requirement that marketer possess evidence sufficient to satisfy relevant scientific community of truth of their claims, in proceeding alleging that advertisements for pomegranate-based products were deceptive in violation of FTC Act by touting medical studies ostensibly showing that daily consumption of its products could treat, prevent, or reduce risk of various ailments; advertisement did not incorporate effective disclaimer, such as statement that ••evidence in support of this claim is inconclusive,•• but instead described studies as ••promising,•• ••initial,•• or ••preliminary.•• Federal Trade Commission Act, § 5, 15 U.S.C.A. § 45.

10. Antitrust and Trade Regulation O222

In proceeding alleging that advertisements for pomegranate-based products were deceptive in violation of Federal Trade Commission (FTC) Act, substantial evidence supported conclusion by FTC that marketer•s advertisements conveyed net impression that clinical studies or trials showed that causal relation had been established between consumption of its products and its efficacy to treat, prevent, or reduce risk of heart disease, prostate cancer, and erectile dysfunction, and thus properly randomized and controlled human clinical trials (RCTs) were required to adequately substantiate its efficacy claims and its non-specific establishment claims. Federal Trade Commission Act, § 5, 15 U.S.C.A. § 45.

11. Antitrust and Trade Regulation O319

In a proceeding alleging that an advertisement is deceptive in violation of the Federal Trade Commission (FTC) Act, when reviewing whether there was appropriate scientific substantiation for the claims made, the task of the Court of Appeals is only to determine if the Commission•s finding is supported by substantial evidence on the record as a whole; in conducting that inquiry, the Court is mindful of the Commission•s special expertise in determining what sort of substantiation is necessary to assure that advertising is not deceptive. Federal Trade Commission Act, § 5(a)(1), (c), 15 U.S.C.A. § 45(a)(1), (c).

12. Antitrust and Trade Regulation O222

In proceeding alleging that advertisements for pomegranate-based products were deceptive in violation of Federal Trade Commission (FTC) Act, substantial evidence supported conclusion by FTC that medical studies referenced by marketer did not qualify as randomized and controlled human clinical trials (RCTs) of kind

that could afford adequate substantiation of marketer•s claims that daily consumption of its products could treat, prevent, or reduce risk of various ailments, and thus marketer•s claims were deceptive. Federal Trade Commission Act, § 15(a)(1), 15 U.S.C.A. § 55(a)(1).

13. Antitrust and Trade Regulation O369

Substantial evidence supported factual finding by Federal Trade Commission (FTC) that experts in relevant fields required randomized and controlled human clinical trials (RCTs) to support claims about disease-related benefits of marketer•s products, in proceeding alleging that advertisements for pomegranate-based products were deceptive in violation of FTC Act, where evidence included written reports and testimony from medical researchers stating that experts in fields of cardiology and urology required randomized, double-blinded, placebo-controlled clinical trials to substantiate any claim that a product treated, prevented, or reduced risk of disease. Federal Trade Commission Act, § 5, 15 U.S.C.A. § 45.

14. Antitrust and Trade Regulation O319 Antitrust (ant fielA. 469 16 >>BDC (-)Tj EMC /P <</MC2MCID 4 >>BDC 0.09 Twf 0.3532 T
O319

19. Antitrust and Trade Regulation O291

Person who had participated directly in meetings about advertising concepts and content, reviewed and edited advertisement copy, managed day-to-day affairs of corporation•s marketing team, and possessed hiring and firing authority over head of its marketing department could be held individually liable under Federal Trade Commission (FTC) Act for corporation•s deceptive acts and practices; although he did not have ••final say•• on those advertisements, he had authority to determine which advertisements were published. Federal Trade Commission Act, § 5, 15 U.S.C.A. § 45.

20. Antitrust and Trade Regulation O136, 152

When the Federal Trade Commission (FTC) does not seek restitution or monetary penalties, and the sole remedy imposed is injunctive relief, the FTC Act imposes a strict liability standard and does not create an exemption for unwitting disseminators of false advertising. Federal Trade Commission Act, § 5, 15 U.S.C.A. § 45.

21. Antitrust and Trade Regulation O382(2)

Injunction could be imposed under Federal Trade Commission (FTC) Act against person who previously had authority to determine which deceptive advertisements were published by corporation that produced food products or dietary supplements, even though he had since voluntarily retired, where he had demonstrated propensity to misrepresent strength and outcomes of scientific research to his advantage, he had engaged in deliberate and consistent course of conduct, and there was no assurance that he would not return to work or join another company that marketed food products or dietary supplements. Federal Trade Commission Act, § 5, 15 U.S.C.A. § 45.

22. Federal Courts O3733

When a litigant•s opening brief presents an argument in conclusory fashion and without visible support, a court has discretion to deem the argument forfeited.

23. Injunction O1250

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.

24. Constitutional Law O1539, 1540, 1641

For commercial speech to come within the First Amendment, it at least must concern lawful activity and not be misleading; consequently, misleading advertising may be prohibited entirely. U.S.C.A. Const.Amend. 1.

25. Antitrust and Trade Regulation O319

Ordinary substantial-evidence standard applied to review of factual finding by Federal Trade Commission (FTC) of deceptive claim in proceeding alleging violation of FTC Act, even in First Amendment context. U.S.C.A. Const.Amend. 1; Federal Trade Commission Act, § 5(c), 15 U.S.C.A. § 45(c).

26. Antitrust and Trade Regulation O374

Constitutional Law O1647

Forward-looking remedial order issued by Federal Trade Commission (FTC) under FTC Act that required corporation to gain support of at least one randomized, controlled, human clinical trial (RCT) study before claiming causal relationship between consumption of pomegranate-based products and treatment or preven-

tion of any disease did not violate free speech clause of First Amendment, since corporation•s efficacy and establishment claims had been misleading because they were unsubstantiated by RCTs; although liability determination concerned claims about three specific diseases whereas remedial order encompassed claims about any disease, broadened scope was justified by corporation•s demonstrated propensity to make deceptive representations about health benefits of its products and by expert testimony supporting necessity of RCTs to establish causation for disease-related claims generally. U.S.C.A. Const. Amend. 1; Federal Trade Commission Act, § 5, 15 U.S.C.A. § 45.

27. Antitrust and Trade Regulation O374

Constitutional Law O1647

Order that barred corporation from running future advertisements asserting that its pomegranate-based products treated or prevented any disease unless armed with at least two randomized, controlled, human clinical trials demonstrating statistically significant results lacked reasonable fit under free speech clause of First Amendment to prevent deceptive advertising, where order separately required corporation 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.•• U.S.C.A. Const. Amend. 1; Federal Trade Commission Act, § 5, 15 U.S.C.A. § 45. -l

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. Ad-

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 be-

tion•• 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

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 TTT 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

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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) TTT 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.

mission•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 488-89 (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. Thepomwonderful.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.

[9] The Commission reviewed the claims in POM•s ads ••in light of any disclaimers or disclosures that [petitioners] actually made.•• FTC Op. at 504-05. 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 POMx 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.

[10, 11] 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

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.

[13] 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 494…95. 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 be-

tween 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••).

[14] 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,

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.

[15, 16] 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.

[17, 18] 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 re-yiolation 4,te U.S.C. E(yio

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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 TTT efficacy claims•• for topical analgesic marketed to treat minor arthritis is ••two well-controlled clinical tests••).

E.

[19] 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.

[20] 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 TTT 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).

[21…23] 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 TTT 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.

[24] ••For commercial speech to come within [the First Amendment], it at least must concern lawful activity and not be TTT2204),n Fir Tdogeen68

Iiamson 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, commonsense, 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 be-

ble. *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

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-guideindustry. 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, 109 S.Ct. 3028;*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 ••nonspecific 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[ ] repli-

cation 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