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SECURITIES AND EXCHANGE COMMISSION  
Washington, D.C. 20549

SCHEDULE 13D

Under the Securities Exchange Act of 1934  
(Amendment \_\_\_)\*

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PEPGEN INC.

(Name of Issuer)

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Common Stock, par value \$0.0001 per share

(Title of Class of Securities)

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713317105

(CUSIP Number)

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RA Capital Management, L.P.  
200 Berkeley Street, 18<sup>th</sup> Floor  
Boston, MA 02116  
Attn: Peter Kolchinsky  
Telephone: 617.778.2500

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(Name, Address and Telephone Number of Person  
Authorized to Receive Notices and Communications)

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May 10, 2022

(Date of Event Which Requires Filing of this Statement)

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If the filing person has previously filed a statement on Schedule 13G to report the acquisition that is the subject of this Schedule 13D, and is filing this schedule because of §§ 240.13d-1(e), 240.13d-1(f) or 240.13d-1(g), check the following box.

**Note:** Schedules filed in paper format shall include a signed original and five copies of the schedule, including all exhibits. See Section 240.13d-7 for other parties to whom copies are to be sent.

\* The remainder of this cover page shall be filled out for a reporting person's initial filing on this form with respect to the subject class of securities, and for any subsequent amendment containing information which would alter disclosures provided in a prior cover page.

The information required on the remainder of this cover page shall not be deemed to be "filed" for the purpose of Section 18 of the Securities Exchange Act of 1934, as amended ("Act") or otherwise subject to the liabilities of that section of the Act but shall be subject to all other provisions of the Act (however, see the Notes).

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1. Names of Reporting Persons.

**RA Capital Management, L.P.**

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2. Check the Appropriate Box if a Member of a Group (See Instructions)

(a)

(b)

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3. SEC Use Only

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4. Source of Funds (See Instructions)

**AF**

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5. Check if Disclosure of Legal Proceedings Is Required Pursuant to Items 2(d) or 2(e)

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6. Citizenship or Place of Organization

**Delaware**

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7. Sole Voting Power

**0**

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Number of  
Shares  
Beneficially  
Owned by  
Each  
Reporting  
Person With

8. Shared Voting Power

**8,131,952**

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9. Sole Dispositive Power

**0**

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10. Shared Dispositive Power

**8,131,952**

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11. Aggregate Amount Beneficially Owned by Each Reporting Person

**8,131,952**

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12. Check if the Aggregate Amount in Row (11) Excludes Certain Shares (See Instructions)

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13. Percent of Class Represented by Amount in Row (11)

**36.3%**

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14. Type of Reporting Person (See Instructions)

**IA, PN**

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1. Names of Reporting Persons.

**Peter Kolchinsky**

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2. Check the Appropriate Box if a Member of a Group (See Instructions)

(a)

(b)

---

3. SEC Use Only

---

4. Source of Funds (See Instructions)

**AF**

---

5. Check if Disclosure of Legal Proceedings Is Required Pursuant to Items 2(d) or 2(e)

---

6. Citizenship or Place of Organization

**United States**

---

7. Sole Voting Power

**0**

---

Number of  
Shares  
Beneficially  
Owned by  
Each  
Reporting  
Person With

8. Shared Voting Power

**8,131,952**

---

9. Sole Dispositive Power

**0**

---

10. Shared Dispositive Power

**8,131,952**

---

11. Aggregate Amount Beneficially Owned by Each Reporting Person

**8,131,952**

---

12. Check if the Aggregate Amount in Row (11) Excludes Certain Shares (See Instructions)

---

13. Percent of Class Represented by Amount in Row (11)

**36.3%**

---

14. Type of Reporting Person (See Instructions)

**HC, IN**

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1. Names of Reporting Persons.

**Rajeev Shah**

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2. Check the Appropriate Box if a Member of a Group (See Instructions)

(a)

(b)

---

3. SEC Use Only

---

4. Source of Funds (See Instructions)

**AF**

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5. Check if Disclosure of Legal Proceedings Is Required Pursuant to Items 2(d) or 2(e)

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6. Citizenship or Place of Organization

**United States**

---

7. Sole Voting Power

**0**

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Number of  
Shares  
Beneficially  
Owned by  
Each  
Reporting  
Person With

8. Shared Voting Power

**8,131,952**

---

9. Sole Dispositive Power

**0**

---

10. Shared Dispositive Power

**8,131,952**

---

11. Aggregate Amount Beneficially Owned by Each Reporting Person

**8,131,952**

---

12. Check if the Aggregate Amount in Row (11) Excludes Certain Shares (See Instructions)

---

13. Percent of Class Represented by Amount in Row (11)

**36.3%**

---

14. Type of Reporting Person (See Instructions)

**HC, IN**

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1. Names of Reporting Persons.

**RA Capital Healthcare Fund, L.P.**

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2. Check the Appropriate Box if a Member of a Group (See Instructions)

(a)

(b)

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3. SEC Use Only

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4. Source of Funds (See Instructions)

**WC**

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5. Check if Disclosure of Legal Proceedings Is Required Pursuant to Items 2(d) or 2(e)

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6. Citizenship or Place of Organization

**Delaware**

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7. Sole Voting Power

**0**

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Number of  
Shares  
Beneficially  
Owned by  
Each  
Reporting  
Person With

8. Shared Voting Power

**6,621,680**

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9. Sole Dispositive Power

**0**

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10. Shared Dispositive Power

**6,621,680**

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11. Aggregate Amount Beneficially Owned by Each Reporting Person

**6,621,680**

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12. Check if the Aggregate Amount in Row (11) Excludes Certain Shares (See Instructions)

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13. Percent of Class Represented by Amount in Row (11)

**25.6%**

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14. Type of Reporting Person (See Instructions)

**PN**

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**Item 1. Security and Issuer**

This Schedule 13D relates to the shares of common stock, \$0.0001 par value per share ("Common Stock"), of PepGen Inc., a Delaware corporation (the "Issuer"), which has its principal executive offices at 245 Main Street, Cambridge, MA 02142.

**Item 2. Identity and Background**

- (a) This Schedule 13D is being filed on behalf of RA Capital Management, L.P. ("RA Capital"), Peter Kolchinsky, Rajeev Shah, and RA Capital Healthcare Fund, L.P. (the "Fund"). RA Capital, Dr. Kolchinsky, Mr. Shah and the Fund are collectively referred to herein as the "Reporting Persons". The agreement among the Reporting Persons to file this Schedule 13D jointly in accordance with Rule 13d-1(k) of the Securities Exchange Act of 1934, as amended, is attached hereto as Exhibit 1.

The Common Stock reported herein includes 6,621,680 shares held by the Fund, 1,302,600 shares held by RA Capital Nexus Fund II, L.P. (the "Nexus Fund II"), and 207,672 shares held by a separately managed account (the "Account"). RA Capital Healthcare Fund GP, LLC is the general partner of the Fund and RA Capital Nexus Fund II GP, LLC is the general partner of the Nexus Fund II. The general partner of RA Capital is RA Capital Management GP, LLC, of which Dr. Kolchinsky and Mr. Shah are the controlling persons. RA Capital serves as investment adviser for the Fund, the Nexus Fund II, and the Account and may be deemed a beneficial owner, for purposes of Section 13(d) of the Securities Exchange Act of 1934 (the "Act"), of any securities of the Issuer held by the Fund, the Nexus Fund II or the Account. The Fund and the Nexus Fund II have delegated to RA Capital the sole power to vote and the sole power to dispose of all securities held in the Fund and the Nexus Fund II, and each of these funds has divested themselves of voting and investment power over the reported securities they hold and may not revoke that delegation on less than 61 days' notice. The Fund and the Nexus Fund II disclaim beneficial ownership of the securities they hold for purposes of Section 13(d) of the Act and therefore disclaim any obligation to report ownership of the reported securities under Section 13(d) of the Act. As managers of RA Capital, Dr. Kolchinsky and Mr. Shah may be deemed beneficial owners, for purposes of Section 13(d) of the Act, of any securities of the Issuer beneficially owned by RA Capital. RA Capital, Dr. Kolchinsky, and Mr. Shah disclaim beneficial ownership of the securities reported in this Schedule 13D Statement (the "Statement") other than for the purpose of determining their obligations under Section 13(d) of the Act, and the filing of the Statement shall not be deemed an admission that either RA Capital, Dr. Kolchinsky, or Mr. Shah is the beneficial owner of such securities for any other purpose.

- (b) The address of the principal business office of each of the Reporting Persons is 200 Berkeley Street, 18<sup>th</sup> Floor, Boston, MA 02116.
- (c) The Fund is a private investment vehicle. RA Capital provides investment management services to the Fund, the Nexus Fund II, and the Account. The principal occupation of Dr. Kolchinsky and Mr. Shah is investment management.
- (d) During the last five years, none of the Reporting Persons has been convicted in a criminal proceeding (excluding traffic violations or similar misdemeanors).
- (e) During the last five years, none of the Reporting Persons has been a party to a civil proceeding of a judicial or administrative body of competent jurisdiction and as a result of such proceeding was or is subject to a judgment, decree of final order enjoining future violations of, or prohibiting or mandating activities subject to, federal or state securities laws or finding any violation with respect to such laws.
- (f) See Item 6 of the cover pages.
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**Item 3. Source and Amount of Funds or Other Consideration**

Prior to the Issuer's May 2022 initial public offering (the "IPO"), the Reporting Persons caused the Fund, the Account, and the Nexus Fund II to purchase an aggregate of 2,801,119 Series A-2 Preferred Shares of the issuer in three separate private placements in November 2020, May 2021, and July 2021 for an aggregate of \$31,999,985.00, (b) in July 2021 the Reporting Persons caused the Fund and the Nexus Fund II to purchase an aggregate of 2,154,354 Series B Preferred Shares of the issuer in a private placement for an aggregate of \$33,499,990.00; and (c) in April 2022, the Issuer's Board of Directors approved an amendment to the Company's certificate of incorporation to effect a 1.018 for 1 reverse stock split of its issued and outstanding shares of common stock and a proportional adjustment to the existing conversion ratios for each series of the Issuer's preferred stock (the "Reverse Stock Split"). In May 2022, the Reporting Persons caused the Fund, the Nexus Fund II, and the Account to exercise warrants for an aggregate of 35,529 Series A-2 Preferred Shares for an aggregate exercise price of \$405,883. The Preferred Shares discussed above automatically converted into 4,902,750 shares of Common Stock upon completion of the IPO and after accounting for the Reverse Stock Split. The Fund and the Nexus Fund II also purchased 3,229,200 shares of Common Stock from the underwriters of the IPO for an aggregate of \$38,750,400. All purchases were for cash and were funded by working capital of the Fund, the Nexus Fund II, and the Account.

**Item 4. Purpose of Transaction**

The Reporting Persons acquired the Common Stock reported herein for investment purposes and not with an intent, purpose or effect of changing control of the Issuer. Although the Reporting Persons currently have no plan or proposal to acquire any additional Common Stock or to dispose of any of the Common Stock reported herein, the Reporting Persons may acquire additional Common Stock from time to time or dispose of Common Stock they beneficially own (including by means of 10b5-1 programs), consistent with their investment purposes and in amounts to be determined by the Reporting Persons based upon a number of factors, including, without limitation, their ongoing assessment of the Issuer's business prospects, prevailing market conditions, the availability of other investment opportunities, and/or other considerations.

In addition, consistent with their investment purpose, the Reporting Persons may engage in communications with persons associated with the Issuer, including shareholders of the Issuer, officers of the Issuer and/or members of the board of directors of the Issuer, to discuss matters regarding the Issuer, including but not limited to its operations and strategic direction. Dr. Joshua Resnick, a Managing Director of RA Capital, currently serves as a director of the Issuer and therefore will engage in regular discussions with the Issuer's board of directors and management as part of his duties as a director.

The Reporting Persons have no plans or proposals that relate to, or could result in, any of the matters referred to in paragraphs (a) through (j), inclusive, of the instructions to Item 4 of Schedule 13D.

The Reporting Persons may, however, change their purpose and formulate and implement plans or proposals with respect to the Issuer at any time and from time to time. Any such action may be made by the Reporting Persons alone or in conjunction with other shareholders, potential acquirers, financing sources and/or other third parties and could include one or more purposes, plans or proposals that relate to or would result in actions required to be reported herein in accordance with Item 4 of Schedule 13D.

**Item 5. Interest in Securities of the Issuer**

- (a) The information set forth in rows 11 and 13 of the cover pages to this Schedule 13D is incorporated by reference. The percentage set forth in row 13 is based on 22,392,973 outstanding shares of Common Stock, as reported by the Issuer in its prospectus filed with the Securities and Exchange Commission on May 9, 2022.
  - (b) The information set forth in rows 7 through 10 of the cover pages to this Schedule 13D and Item 2 above is incorporated by reference.
  - (c) Schedule A sets forth all transactions with respect to the shares of Common Stock effected during the past sixty days by any Reporting Person and is incorporated herein by reference.
  - (d) No person (other than the Reporting Persons) is known to have the right to receive or the power to direct the receipt of dividends from, or the proceeds from the sale of, the shares of Common Stock subject to this Schedule 13D.
  - (e) Not applicable.
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**Item 6. Contracts, Arrangements, Understandings or Relationships with Respect to Securities of the Issuer**

**Lock-Up Agreement**

The shares reported on this 13D are subject to a lock-up agreement, as referenced in the Issuer's S-1 filed with the SEC on May 9, 2022. Pursuant to the lock-up agreement, the Fund, the Nexus Fund II, and the Account may not, with limited exceptions, for a period of 180 days from the date of the Issuer's prospectus, offer, sell, or otherwise transfer or dispose of any of the Issuer's securities, without the consent of BofA Securities, Inc., SVB Securities LLC and Stifel, Nicolaus & Company, Incorporated.

**Investors' Rights Agreement**

In July 2021, the Issuer, the Fund, the Nexus Fund II, the Account and certain other parties entered into an amended and restated investors' rights agreement (the "Investors' Rights Agreement"). The Investors' Rights Agreement provides the Fund and other parties thereto with certain demand registration rights, including short-form and piggyback registration rights, in respect of the shares of Common Stock issued to it upon conversion of the Preferred Shares, subject to certain conditions. In addition, in the event that the Issuer registers additional shares of Common Stock for sale to the public, it will be required to give notice of such registration to the Fund and certain other parties of its intention to effect such a registration, and, upon request of one or more such parties and subject to certain limitations, include the shares of Common Stock held by them in such registration. The registration rights will terminate (1) with respect to a party that then holds less than 1% of the Issuer's outstanding shares of capital stock, such time after the completion of the Issuer's initial public offering as Rule 144 or other similar exemption is available for the sale of such party's shares without limitation, during a three-month period without registration, or (2) on the third anniversary of the completion of the Issuer's initial public offering. The Investor Rights Agreement contains customary cross-indemnification provisions, pursuant to which the Issuer is obligated to indemnify the Fund, the Nexus Fund II, the Account and other parties in the event of material misstatements or omissions in the registration statement attributable to the Issuer or any violation or alleged violation whether by action or inaction by the Issuer under certain securities laws and the Fund, the Nexus Fund II, and the Account are obligated to indemnify the Issuer for material misstatements or omissions in the registration statement attributable to such party, subject to certain limitations.

The description of the Investors' Rights Agreement contained in this Item 6 is qualified in its entirety by reference to the full text of the agreement (incorporated by reference to Exhibit 4.1 to the Issuer's Amendment No. 2 to Registration Statement on Form S-1 (File No. 333-264335)).

**Equity Awards**

Dr. Resnick, a Managing Director at RA Capital, is a member of the Board of Directors of the Issuer. From time to time, Dr. Resnick may receive stock options or other awards of equity-based compensation pursuant to the Issuer's compensation arrangements for non-employee directors. Pursuant to an agreement with RA Capital, Dr. Resnick is obligated to transfer any securities issued under any such stock options or other awards, or the economic benefit thereof, to RA Capital.

**Item 7. Material to be Filed as Exhibits**

- Exhibit 1 Joint Filing Agreement
  - Exhibit 2 Form of Amended and Restated Investors' Rights Agreement (incorporated by reference to Exhibit 4.1 to the Issuer's Amendment No. 2 to Registration Statement on Form S-1 (File No. 333-264335))
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## SIGNATURES

After reasonable inquiry and to the best of my knowledge and belief, I certify that the information set forth in this statement is true, complete and correct.

Dated: May 20, 2022

RA CAPITAL MANAGEMENT, L.P.

By: /s/ Peter Kolchinsky  
Name: Peter Kolchinsky  
Title: Authorized Signatory

PETER KOLCHINSKY

/s/ Peter Kolchinsky

RAJEEV SHAH

/s/ Rajeev Shah

RA CAPITAL HEALTHCARE FUND, L.P.

By: RA Capital Healthcare Fund GP, LLC  
Its: General Partner

By: /s/ Peter Kolchinsky  
Name: Peter Kolchinsky  
Title: Manager

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**Schedule A**

<b>Name</b>	<b>Date of Transaction</b>	<b>Number of Shares Acquired / (Disposed)</b>	<b>Transaction</b>	<b>Price per Share</b>
RA Capital Healthcare Fund, L.P.	05/10/22	3,642,229 Common Stock	Conversion	(1)
RA Capital Nexus Fund II, L.P.	05/10/22	1,052,851 Common Stock	Conversion	(1)
Account	05/10/22	207,672 Common Stock	Conversion	(1)
RA Capital Healthcare Fund, L.P.	05/10/22	2,979,451 Common Stock	Purchase	\$12.00
RA Capital Nexus Fund II, L.P.	05/10/22	249,749 Common Stock	Purchase	\$12.00

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(1) On May 10, 2022 each share of Series A-2 Preferred Stock and Series B Preferred Stock (collectively, the “Preferred Stock”) converted into Common Stock at a ratio of 1.018-for-1 without payment of further consideration upon closing of the IPO of the Issuer’s common stock. The shares had no expiration date.

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**JOINT FILING AGREEMENT**

This Joint Filing Agreement, dated as of May 20, 2022 is by and among RA Capital Management, L.P., Peter Kolchinsky, Rajeev Shah, and RA Capital Healthcare Fund, L.P. (the foregoing are collectively referred to herein as the "Filers").

Each of the Filers may be required to file with the United States Securities and Exchange Commission a statement on Schedule 13G and/or 13D with respect to Common Stock, par value \$0.0001 per share of PepGen Inc. beneficially owned by them from time to time.

Pursuant to and in accordance with Rule 13(d)(1)(k) promulgated under the Securities Exchange Act of 1934, as amended, the Filers hereby agree to file a single statement on Schedule 13G and/or 13D (and any amendments thereto) on behalf of each of such parties, and hereby further agree to file this Joint Filing Agreement as an exhibit to such statement, as required by such rule.

This Joint Filing Agreement may be terminated by any of the Filers upon one week's prior written notice or such lesser period of notice as the Filers may mutually agree.

Executed and delivered as of the date first above written.

RA CAPITAL MANAGEMENT, L.P.

By: /s/ Peter Kolchinsky  
Name: Peter Kolchinsky  
Title: Authorized Signatory

PETER KOLCHINSKY

/s/ Peter Kolchinsky

RAJEEV SHAH

/s/ Rajeev Shah

RA CAPITAL HEALTHCARE FUND, L.P.

By: RA Capital Healthcare Fund GP, LLC  
Its: General Partner

By: /s/ Peter Kolchinsky  
Name: Peter Kolchinsky  
Title: Manager

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